Mountainview Power Plant

00-AFC-002

Responses to The First Set of Data Requests (1 to 124) by the California Energy Commission

******(**Electronic Form**)******

Note: Electronic form is not complete in that it does not include some attachments. This form does, however, include all responses to all data requests.

Mountainview Power Company, LLC.
July 14, 2000.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

1. Please provide documentation of all proposed offsets. This documentation may be any one of the following:
   A. A Letter of Intent,
   B. An Options Contract, or
   C. An actual certificate.
   D. Identification of any offsets under negotiation including a discussion of the status of obtaining the offsets.

RESPONSE:

A confidential filing, Attachment AQ-4A, summarizing the current status of securing the necessary emission offset credits (ERCs) and RECLAIM trading credits (RTCs) for the MVPC project is provided separately.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

2. Please evaluate and comment on the technical and economic feasibility of the following construction equipment emission reduction methods and technologies. Please reference the source of all information reported and compare these methods to those described on page 6.8-57 of the AFC.
   A. Retarding engine timing on construction equipment (2 to 4 degrees),
   B. Using construction equipment with pre-combustion chamber engines,
   C. Using diesel fire construction equipment with high pressure injectors,
   D. Installing catalytic converters on all gas power construction equipment,
   E. Replacement of diesel generators with electric driven motors via existing power transmission corridors where possible,
   F. Installing oxidation catalysts on all diesel powered construction equipment,
   G. Installing oxidizing soot filters on all applicable diesel powered construction equipment,
   H. Installation of ceramic engine coatings to all applicable diesel powered construction equipment,
   I. Using alternative, low-emission fuels (i.e., CNG) and/or fuel additives (i.e., PuriNO_x) for all construction equipment, and
   J. Using low sulfur content (50 ppm or better) diesel fuel for on-site construction equipment.

RESPONSE:

The following is MVPC response to the construction equipment mitigation measured listed in the CEC data request.

<u>Retarding engine timing on construction equipment (2 to 4 degrees)</u>

Based on information in the Midway Sunset Cogeneration Company s (99-AFC-9) June 2000 data response to the CEC for Data Request #2, while this NOx

emission control technique was widely used to mitigate emissions on older Diesel engines, it is not effective on most modern engines utilizing electronic fuel injection. In addition, there are fuel efficiency and lube oil contamination problems as well as increases in smoke, hydrocarbons, and particulate emissions. Consequently, MVPC is proposing to use this NOx control measure only for older equipment that is not equipped with electronic fuel injection.

Using construction equipment with pre-combustion chamber engines

Based on information in the Midway Sunset Cogeneration Company s June 2000 data response to the CEC for Data Request #2, this technology is outdated and no longer used for reducing emissions from off-road Diesel equipment. Therefore, MVPC is not proposing to use this emission control measure for the construction phase of the project.

Using Diesel-fired construction equipment with high pressure injectors

Based on information in the Midway Sunset Cogeneration Company s June 2000 data response to the CEC for Data Request #2, this technology is standard equipment on late-model Diesel construction equipment. However, due to high retrofit costs, the technology is not economically viable for older equipment. Since MVPC is planning on using late-model construction equipment, most of the construction equipment for the project will be equipped with high pressure injectors. However, MVPC is not proposing to use this technology on any older units that may be involved with the construction phase of the project.

Installing catalytic converters on all gas-powered construction equipment

Catalytic converters are standard equipment on late model on-highway gasoline vehicles. Since nearly all of the gasoline fueled onsite equipment planned for the MVPC construction project are on-highway trucks, they will be equipped with catalytic converters. The remaining construction equipment for the project that will have gasoline engines will be small pumps and soil tampers (less than 20 horsepower). Due to the difficulty in retrofitting controls on these small units, MVPC is not proposing to use this technology on the small gasoline power equipment.

MOUNTAINVIEW POWER PLANT PROJECT DATA REQUEST (00-AFC-2)	
Technical Area	**Air Quality**

Minimizing engine idle time to 2-5 minutes

Limiting engine idle time for construction equipment is one of the mitigation measures proposed in the AFC for the MVPC project (Section 6.8.3.1.6 of the AFC). MVPC is proposing to limit construction equipment idle time to less than 10 minutes where feasible. However, some types of turbocharged engines may require cool-down periods of several minutes prior to restart to avoid damage to the engine. For this equipment, MVPC proposes to limit construction equipment idle time to less than 30 minutes.

Replacement of diesel generators with electric driven motors via existing power transmission corridors where possible

Because the MVPC project is being constructed at a site with existing utility power as well as two existing 63 MW natural gas-fired boilers, during onsite construction MVPC will use utility electric power rather than operate Diesel generators. Due to the transient nature of the construction of the linear projects such as the natural gas and water pipelines that make the use of utility power impractical, MVPC is proposing to use Diesel generators for these construction projects.

Installing oxidation catalysts on all Diesel powered construction equipment

According to a March 2000 paper by the Manufacturers of Emission Controls Association (MECA) entitled Emission Control Retrofit of Diesel-Fueled Vehicles , oxidation catalyst equipped Diesel engines operating with fuel sulfur levels at or below 0.05% wt. have achieved particulate emission reductions of 20% to 50% and HC/CO emission reductions of 60% to 90%. These emission reduction estimates for HC and CO were confirmed during a discussion with Catalytic Exhaust Products Ltd. (7/7/00 telephone conversation with John Stekar), a manufacturer and supplier of Diesel equipment oxidation catalysts and soot filters. However, according to Catalytic Exhaust Products (CEP) a more realistic expected reduction in total particulates is around 20% to 25% rather then the higher level of 50% discussed in the MECA publication. For the units supplied by CEP, the initial light off temperature of a catalyst ranges from approximately 440 F for CO and HC to 500 F for PM. Maximum CO and HC emission reductions occur with an exhaust temperature of approximately 800

F. However, at this higher catalyst operating temperature sulfate conversions occurring in the catalyst increase to the point where there can actually be an increase in total particulate emissions from Diesel equipment. According to CEP, oxidation catalysts are available for a variety of Diesel construction equipment ranging from forklifts to bulldozers. Due to increases in exhaust backpressure caused by the catalyst, there is a decrease in engine power of approximately 2%. Based on the size of equipment expected for the MVPC construction project, the price of a basic oxidation catalyst unit ranges from approximately $800 (for a forklift) to $5,000 (for a bulldozer). For an oxidation catalyst that is packaged in the proper manufacturer s muffler housing for simple installation, the cost can range from $1,100 to $7,000. These costs do not include the costs for installation and lost productivity. MVPC is proposing to further study the use oxidation catalysts on all Diesel construction equipment. If this study concludes that there are catalysts available for the specific units needed for the MVPC construction project and there are no additional safety/maintenance issues associated with their use, MVPC will use oxidation catalysts as one of the mitigation measures for the construction phase of the project.

Installing oxidizing soot filters on all applicable diesel powered construction equipment

According to the March 2000 MECA paper discussing emission control retrofits for Diesel equipment, Diesel particulate filter systems (soot filters) can achieve particulate emission reductions well over 90%. However, the MECA publication notes that the exhaust temperature of Diesel engines is not always sufficient to initiate the self-cleaning properties of the filter. This problem with soot filters was confirmed during a discussion with Catalytic Exhaust Products (7/7/00 telephone conversation with John Stekar) a manufacturer and supplier of Diesel equipment oxidation catalysts and soot filters. According to Catalytic Exhaust Products (CEP), a Diesel engine must produce an exhaust temperature at the soot filter of at least 750 F during one-third of the operating time for the soot filter properly complete its self cleaning cycle. If this temperature is not reach and maintained for a sufficient length of time, the soot filter can plug-up. This plugging of the soot filter can occur within a few hours of equipment operation. The plugging of a soot filter at the very least will shutdown the Diesel equipment in question and at the worst it will overheat and damage the Diesel equipment s turbocharger and/or cause a rapid

exothermic reaction within the soot filter which will destroy the filter. Similar to oxidation catalysts, soot filters are available for a variety of Diesel construction equipment. The increases in exhaust backpressure caused by the soot filter can decrease engine power by approximately 3% to 4%. According to CEP, the cost for soot filters is approximately $33 per horsepower. Based on the size of equipment expected for the MVPC construction project, the price of a soot filter ranges from approximately $2,800 (for a forklift) to $15,000 (for a bulldozer). These costs do not include the costs for installation and lost productivity. Due to the possible operating/maintenance problems associated with plugged soot filters and the high costs associated with the filters, MVPC is not proposing to use soot filters for the construction phase of the project.

Installation of ceramic engine coatings to all applicable diesel powered construction equipment

Based on information in the Midway Sunset Cogeneration Company s June 2000 data response to the CEC for Data Request #2, the application of engine coatings can cost approximately $2,400 for a standard 8-cylinder Diesel engine with an added cost ranging from $20,000 to $60,000 for engine dismantlement and rebuild costs. At an average cost of $45,000 per engine, the total cost of using ceramic engine coatings for the MVPC construction project would be approximately $1.1 million. This total cost does not include controlling the equipment used for the linear construction projects. Due to the high cost associated with this technology, as well as its limited potential for retrofit applications, MVPC is not proposing to use it as a mitigation measure.

Using alternative, low-emission fuels (i.e., CNG) and/or fuel additives (i.e., PuriNOx) for all construction equipment

Based on information in the Midway Sunset Cogeneration Company s June 2000 data response to the CEC for Data Request #2, there are no compressed natural gas (CNG) engines commercially available for large construction equipment. (It is MVPC s understanding that some construction equipment can be custom-manufactured to use compressed or liquefied natural gas; however, this option is impractical for a short term construction project.) In addition, while PuriNOx may provide some emission reductions for construction equipment, there is expected to be a fuel cost increase of approximately 25%. Consequently, MVPC is not proposing to use CNG

engines or PuriNOx as mitigation measures during the construction of the proposed project.

Using low sulfur content (50 ppm or better) diesel fuel for on-site construction equipment

Use of ultra-low sulfur content Diesel fuel will decrease sulfur dioxide and particulate sulfate emissions from Diesel construction equipment. According to recent discussions with ARCO s product marketing group (7/7/00 telephone conversation with Bob Hamm with ARCO), ARCO is making ultra-low sulfur content Diesel fuel (i.e., 15 ppm sulfur) available in the Southern California area at a cost of approximately $0.05 per gallon above the current retail price of CARB certified Diesel fuel. While there may be an additional transportation cost associated with the use of ultra-low sulfur content Diesel fuel, the total added cost appears to be reasonable. Therefore, MVPC is proposing to further study this mitigation measure and will use it to reduce emissions from construction equipment as long as there is sufficient fuel available and there are no engine maintenance issues associated with its use.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

3. Please submit a written report from the appropriate authorities at the San Bernardino International Airport, formally Norton Air Force Base (SBI/NAFB), containing the following information and submit the report to the California Energy Commission:
   A. In the last ten years of operation, how often has the cooling tower vapor plume associated with the existing power plant facility been identified as the reason to alter aircraft landing patterns and/or procedures?
   B. Have landing procedures at SBI/NAFB ever included airport advisories regarding the existing power plant in the last ten years?

RESPONSE:

See Attachment AQ-1A which is a letter from the San Bernardino International Airport authority stating that during their control of the airport, 1993 to present, there have never been advisories concerning the plant nor have aircraft landing patterns or procedures ever been altered as a result of the cooling tower vapor plume.

ATTACHMENT

AQ-1A

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

4. Please submit all vendor guarantees for the turbine, heat recovery steam generator and post combustion controls that indicate the overall facility NO_x, SO_x, CO, VOC and $PM1_0$ emission rates.

RESPONSE:

A confidential filing, Attachment AQ-4A, including copies of these guarantees is provided separately. Please note that final selection of an HRSG vendor has not yet been made. The HRSG vendor guarantee included in Attachment AQ-4A is intended to represent a typical commercial guarantee for the proposed emission rates.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

5. Please justify any difference between the facility emission rates as indicated by the vendor guarantees and the emission rates reported in Table 6.8-31 of the AFC.

RESPONSE:

For CO, VOC, and NO_x, the emission rates shown in the guarantees contained in confidential Attachment AQ-4A are either equal to are less than the emission levels shown on Tables 6.8-30 and 6.8-31 of the AFC. For PM_{10}, the levels shown on Tables 6.8-30 and 6.8-31 of the AFC are higher than the levels shown in Attachment AQ-4A because the levels shown in the AFC account for increases in PM_{10} emissions due to sulfate conversion across the SCR and oxidation catalysts. Because the SO_x emissions levels shown in the AFC are based on the natural gas sulfur content, there is no corresponding vendor emission guarantee for this pollutant.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

6. Please provide the estimated length of each phase of initial commissioning, a detailed description of each type of commissioning test, the estimated maximum emissions expected, and any proposed mitigation.

RESPONSE:

Enclosed as Attachment AQ-6A is a figure showing the projected schedule for the commissioning period for the MVPC project. Please note that the enclosed schedule is for a pair of gas turbine/HRSGs. Once the commissioning period is complete for the first pair of gas turbine/HRSGs, an identical commissioning period will begin for the second pair of gas turbines/HRSGs at the facility. As shown in the enclosed figure, the commissioning period is comprised of several equipment tests. These tests are briefly summarized below:

- Full Speed No Load Tests (FSNL) - These tests will occur over approximately a 5-day period. The tests include a test of the gas turbine ignition system, a test to insure that the gas turbine is synchronized with its electric generator, and a test of the gas turbines over speed system. During the tests, the heat input to the gas turbine will be approximately 400 MMBtu/hr or 20% of the maximum heat input rating.

- Part Load Tests - These tests will occur over approximately a 6-day period. During the test the gas turbine combustor will be tuned to minimize emissions and HRSG/steam line checks will be performed. During the tests, the heat input to the gas turbine will be approximately 1,160 MMBtu/hr or 60% of the maximum heat input rating.

- Full Load Tests (SCR Not Operational) - These tests will occur over approximately a 4 day period. By the beginning of this test period, the gas turbine combustor will be completed tuned. Since the ammonia injection system will not be operated during this testing period, the SCR system will not be operational. The test will include further checks on the HRSG and steam lines. During the tests, the heat input to the gas turbine will be approximately 1,991 MMBtu/hr or 100% of the maximum heat input rating.

- Full Load Tests (SCR Partial Operation) - These tests will occur over approximately a 5-day period. During the test the ammonia injection system will be tuned to minimize NO_x. During the tests, the heat input to the gas turbine will be approximately 1,991 MMBtu/hr or 100% of the maximum heat input rating.

- Full Load Tests (SCR Fully Operational) - These tests will occur over approximately a 13 day period for the first gas turbine/HRSG and a 1 day period for the second gas turbine/HRSG. By the beginning of this test period the SCR system will be completed tuned and achieving NO_x control at design levels. During the tests, the heat input to the gas turbine will be approximately 1,991 MMBtu/hr or 100% of the maximum heat input rating.

Enclosed as Attachment AQ-6B is an analysis of the emissions during the commissioning of the MVPC project. The following table summarizes the maximum hourly, daily, and total emissions during the commissioning tests.

Other than trying to tune the gas turbine combustor and ammonia injection systems as soon as possible during the commissioning tests, MVPC is not proposing any additional mitigation measures for the commissioning period.

Table AQ-6.1
Emissions During Commissioning Period
MVPC

	NOx	CO	VOC	SOx	PM_{10}
Maximum Hourly Emissions (lbs/hr)	189	411	7	2	22
Maximum Daily Emissions (lbs/day)	2,265	4,931	83	20	264
Total Emissions (lbs)	69,284	223,158	4,447	1,391	14,256

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

7. Please evaluate the contribution of ammonia slip emissions from the proposed power plant on the formation of secondary PM10.

RESPONSE:

The hourly and annual ammonia slip emissions calculated for the MVPC project are shown on Table 6.9-4 of the AFC. While ammonia emissions can contribute to the formation of secondary PM_{10} (primarily ammonium nitrate), we are unable to quantify the contribution of the project s ammonia emissions to secondary particulates because an acceptable method of such quantification is not available. In general, quantification of the contribution of ammonia emissions to ambient PM_{10} levels in an area as broad as the South Coast Air Basin is a difficult task, involving many assumptions, and is beyond the scope or capabilities of any individual applicant. The eastern portion of the South Coast Air Basin, where the MVPC project is proposed to be located, is generally ammonia rich. Under these conditions, adding more ammonia to the ambient air will not necessarily result in more ammonium nitrate formation; the CEC has previously reached a similar conclusion in the Final Staff Assessment for the La Paloma Generator Project (98-AFC-2).

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

8. Does the applicant intend to have the emission estimates stated in Table 6.8-32 in lbs/hour as permit emission limits during startup procedures?

RESPONSE:

For past projects, the CEC has established gas turbine startup emission limits under a variety of terms. Recently, however, the CEC is requiring projects to commit to hourly emission limits during startups. Consequently, MVPC is prepared to comply with the VOC, CO, and NO_x emission estimates shown on Table 6.8-32 of the AFC as permit limits during gas turbine/HRSG startups. In addition, MVPC is prepared to confirm compliance with these startup emission limits with source testing.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

9. Please state whether or not power augmentation is being proposed for the Mountainview Power Plant.

RESPONSE:

Steam injection for power augmentation will not be used for the MVPC project

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

10. Please provide a copy of the original, uncorrected meteorological data file from the Redlands monitoring station for the year of 1981. If this information is not available, please provide a letter from the South Coast Air Quality Management District stating that the 1981 Redlands meteorological data was corrected according to US EPA recommended guidelines.

RESPONSE:

In the modeling protocol that was submitted to the South Coast AQMD and the CEC on September 21, 1999, we provided an analysis justifying the representativeness of the 1981 Redlands meteorological data for the MVPC modeling analysis. This modeling protocol was approved by the South Coast AQMD on November 1, 1999. A copy of the modeling protocol was also included as Appendix G.4 of the AFC for the MVPC project. Furthermore, as discussed in Section 6.8.3.2.4.1 of the AFC, the CTSCREEN model was used to analyze one-hr NO_2 in the complex terrain to the south of the project site. Since the CTSCREEN modeling uses default screening level meteorological data, the question regarding the representativeness of the 1981 Redlands meteorological data is not an issue regarding worst-case short-term NO_2 impacts. Finally, included as Attachment AQ-10A is a copy of an e-mail from the South Coast AQMD modeling group concluding that the use of the 1981 Redlands meteorological data is appropriate for the proposed Mountainview Power Plant project.

MOUNTAIN VIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

11. Please provide a letter from the South Coast Air Quality Management District with supporting analysis demonstrating that that the 19 year old meteorological data (1981 Redlands) that was used by the applicant is an appropriate surrogate for more recent meteorological data.

RESPONSE:

See response to Data Request #10.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

12. Please verify that the modeling performed for the startup emissions accurately represent two turbines in startup mode and two turbines at full load.

RESPONSE:

The NO_x emission rate of 4.478 g/s found in the modeling file labeled STRT-NO_x that is discussed in the CEC data request corresponds to a hourly NO_x emission rate of 35.54 lbs/hr. As shown on Table 6.8-30 of the AFC, this hourly emission rate is equal to the combined emissions for two gas turbine/HRSGs operating at full load, with duct burners on, at 30°F ambient temperature, with a NOx level of 2.5 ppm @ 15% O_2 (i.e., each gas turbine/HRSG with an emission rate of 17.77 lbs/hr). Furthermore, as shown on Table 6.8-38 of the AFC and found in the modeling file labeled STRT-NO_x, the NO_x emissions modeled during the startup of a gas turbine/HRSG is 2.52 g/sec or 20 lbs/hr per gas turbine/HRSG. Consequently, the gas turbine startup modeling analysis in the AFC reflects two gas turbine/HRSGs operating at full load and two units in the startup mode.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

13. Please verify the heat recovery steam generator stack height, stack diameter, exhaust temperature, exhaust flow, exhaust velocity, short-term (1-hour, 3-hour, 8-hour and 24-hour) and long-term (annual) emission rates for NOx, SOx, CO, VOC and PM10.

RESPONSE:

As discussed in the CEC data request, the gas turbine/HRSG stack diameter used in the screening level modeling was 5.486 meters. Since the purpose of the screening level modeling is to establish the operating mode that results in maximum modeled ambient impacts, the screening level modeling reflects the operation of a single gas turbine/HRSG operating under various operating conditions. Therefore, the screening level modeling analyzes a single exhaust stack with a diameter of 5.486 meters.

Rather than examining only a single unit, the refined modeling examines the combined impacts from the four gas turbine/HRSGs. The four units are grouped into two pairs. Each pair of gas turbine/HRSG forms a power block. The two exhaust stacks for each power block are co-located side by side. While each separate exhaust stack has a diameter of 5.486 meters, when stacks are co-located, the stacks are modeled with a single effective stack diameter. The cross-sectional area of a single 5.486 meter diameter exhaust stack is 23.64 m^2. Therefore, the combined cross-sectional area of two 5.486 meter diameter co-located stacks is 47.28 m^2. The corresponding effective single stack diameter for this combined cross-sectional area is 7.758 meters. It is this single effective stack diameter for each set of co-located stacks that was used in the refined modeling analysis. Since the use of the single effective stack diameter does not change the combined cross-sectional area of the two co-located stacks, there is no change in the exhaust flow or exhaust velocity when using a single effective stack diameter for co-located stacks. Consequently, as noted by the CEC staff in the data request, there was no change in the exhaust flow, exhaust velocity, or exhaust temperature between the screening level modeling and the refined modeling.

The CEC data request also notes that emission rates changed from the

screening level to the refined level modeling to reflect a change in stack diameter. The only change in emission rates between the screening level and refined modeling occurs when analyzing annual impacts. For the screening level modeling, annual impacts are determined for each operating mode based on operating a single gas turbine/HRSG 24 hours per day, 365 days per year. However, for the refined modeling, annual impacts are analyzed based on the maximum annual emissions expected for the four gas turbines/HRSGs operating at several different modes during the year. These worst-case expected annual emissions are shown on Tables G.3.8.a, G.3.8.b, and G.5.3 of the AFC. Consequently, the difference between the emission levels analyzed for the screening and refined modeling are due to a difference in the number of hours at each operating mode rather than due to a change in stack diameter.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

14. Please verify the height of the emergency generator exhaust stack.

RESPONSE:

The CEC is correct in its conclusion that the emergency generator exhaust stack will be equal to the height of the exhaust stacks on the existing boilers (i.e., 39.62 meters or 130 feet). The emergency generator exhaust stack will be run up the side of one of the existing boiler exhaust stacks. The engineering firm responsible for the final engineering of the MVPC project is in the process of reevaluating the size and location of the emergency generator. Consequently, if the size and/or location of the emergency generator is changed, the height and diameter of the unit may also change. If this is the case, MVPC will need to revaluate the air quality impacts from the emergency generator. In any case, the emergency generator exhaust stack will be properly engineered to comply with the back-pressure specifications of the emergency generator engine.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

15. Please verify the brake-horse-power of all construction equipment listed in Appendix G.2.

RESPONSE:

The construction equipment horsepower ratings used for the MVPC construction impact analysis were based on those used for other projects reviewed by the CEC. However, recently it was determined by the engineering firm responsible for the design of the MVPC project that the construction equipment list used for the AFC construction impact analysis needed to be revised. Consequently, it was necessary to update the construction impact analysis for the MVPC project to reflect the new equipment list. The revised construction impact analysis for the MVPC project is included as Attachment AQ-15A.

ATTACHMENT

AQ-15A

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

16. Please provide a top-down BACT analysis for the Mountainview project that includes SCONOx and any other applicable control technologies as soon as it is available.

RESPONSE:

Enclosed as Attachment AQ-16A is a BACT analysis examining SCR/oxidation catalyst systems and SCONOx. As concluded in this analysis, SCR/oxidation catalyst systems represent BACT for the MVPC project.

ATTACHMENT

AQ-16A

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Air Quality**

REQUEST:

17. Please provide Enclosure 1 as identified on page 3, paragraph 2, 5TH sentence of the confidential filing.

RESPONSE:

A copy of the table analyzing the emission offsets needed for the MVPC project was inadvertently excluded from the emission offset confidential filing. Two versions of this table were developed at the beginning of this year as part of a discussion with the District regarding the proper amount of offsets for the project. The two versions of the table are provided as Attachment AQ-17A as a confidential filing.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

18. Please identify the potential for take of the Santa Ana sucker (with the listing of this species, the definition of take has expanded beyond just the loss of individuals), including a discussion of the potential for sedimentation of Santa Ana River waters from the trenching, or from overland flows from the proposed generator site.

RESPONSE:

The Santa Ana Sucker is distributed only within certain rivers in Southern California, including the Santa Ana River. It s status with the US Fish and Wildlife Service as threatened was changed on April 12, 2000, after the filing of the AFC. A California Natural Diversity Database Search has identified the Santa Ana Sucker as present within the River, but the habitat requirements within the River limit the species to cool, unpolluted water with large amounts of algae. After surveying the potential trenching area, neither the Santa Ana Sucker nor likely habitat was found. The flow of the channel, however, is severely limited during the dry summer months to the point where water ceases to be in continuous movement. Construction methods for the gas pipeline will be employed to minimize and/or eliminate intrusion into the active channel when water flow is present. No other construction will intrude into the river channel. By taking precautions to prevent sedimentation, the potential for a take is very slim. The Santa Ana River and the Santa Ana Sucker should remain unaffected.

Sedimentation from trenching, if required, will be minimized by the measures outlined in number 25. Construction methods will be employed to minimize and/or eliminate intrusion into any active channel, thereby limiting the amount of disturbance to wildlife found in the water.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

19. Please identify the location of California gnatcatcher proposed critical habitat in relationship to all proposed project features, and the potential for direct, indirect and cumulative impacts on the critical habitat.

RESPONSE:

According to the USFWS, the California gnatcatcher habitat is defined by the presence of sage scrub habitat, usually including black sage, brittlebrush, California buckwheat, California encelia, mixed sage, prickly-pear cacti, purple sage, scalebroom, and white sage. According to the California Natural Diversity Database (CNDDB) the California gnatcatcher has been sighted along the Santa Ana River Wash in an area dominated by sage. There were no sightings of this bird near the proposed construction site during the survey period, and the pipeline does not invade any area considered potential habitat. The power plant, however, is within a one-mile radius of a narrow piece of land along the northern edge of the Santa Ana River that could possibly be considered habitat but is likely to be too open to be suitable for this species. Direct and indirect impacts would be minimal to this area, as it is out of range from the proposed construction. If this area were inhabited by the gnatcatcher, cumulative impacts would be minimal during plant construction and negligible after completion of the project.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

20. Please provide in a table format:

    a. Total acres that will be temporarily or permanently impacted by the project facilities (power plant, and each linear facility including transmission lines, natural gas, freshwater, and wastewater pipelines) during project construction and operation.

    b. Total acres that will be temporarily or permanently impacted by the construction and usage of the project s off-site staging areas for the natural gas, freshwater, and wastewater pipeline construction.

    c. Total acres of each plant community type that will be temporarily or permanently impacted by all project facilities (power plant, and each linear facility including transmission lines, natural gas, freshwater, and wastewater pipelines) and off-site staging areas. Please identify plant communities using resource agency-accepted community identification [Holland (1986) or Sawyer and Keeler-Wolf (1995)].

    d. Total acres of permanently or temporary impacted lands that are conserved lands? Conserved lands are defined as lands managed by either a federal or state agency such as the Bureau of Land Management, Department of Energy, or the California Department of Fish and Game (CDFG) or a private habitat protection organization such as the Center for Natural Lands Management.

RESPONSE:

Acreage amounts for the temporary or permanent impacts associated with the proposed project are shown in attached Table BIO-20a.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Table BIO-20a
Acreage Amounts

A. Project Facilities	**Temporarily Impacted**	**Permanently Impacted**
Power Plant	3.00 acres	18.70 acres
Transmission Lines	Project proposes no change	Project proposes no change
Natural Gas Pipeline	206.00 acres*	0 acres
Freshwater Pipeline	27.87 acres*	0 acres
Wastewater Pipeline	2.53 acres*	0 acres
	Temporarily Impacted	**Permanently Impacted**
B. Off-Site Staging Areas		
Natural Gas Pipeline	3 acres	0 acres
Freshwater Pipeline	0 acres	0 acres
Wastewater Pipeline	0 acres	0 acres
C. Plant Community		
Power Plant		
Ruderal	0 acres	18.7 acres
Transmission Lines	*Project proposes no change*	*Project proposes no change*
Natural Gas Pipeline		
Ruderal	1.88 acres*	0 acres
Freshwater Pipeline	0 acres	0 acres
Wastewater Pipeline		
Ruderal	2.31 acres***	0 acres
Ornamental Planting	.2 acres	.2 acres
D. Conserved Lands		
Power Plant	0 acres	0 acres
Transmission Lines	*Project proposes no change*	*Project proposes no change*
Natural Gas Pipeline	0 acres	0 acres
Freshwater Pipeline	0 acres	0 acres
Wastewater Pipeline	0 acres	0 acres

* assume 100 foot right-of-way for pipeline estimates
*** within golf course

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

21. Please identify the width of all trench corridors, separating the area needed for the trench and areas required for construction equipment, the width for the waterway crossings, and indicate if the corridors would be maintained at any specific level of vegetative cover or left unmaintained during operations.

RESPONSE:

Corridor Widths	**Width**	**Total Area Temporarily Impacted**
Trench Corridor	100 feet	239.4 acres
Waterway Crossings		
Santa Ana River	100 feet	1.88 acres
Twin Creek Channel	25 feet	.36 acres
Etiwanda Creek	20 feet	.23 acres

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Technical Area	**Biological Resources**

REQUEST:

22. Please provide an update on the work being done to create the draft BRMIMP. In addition, please provide an annotated outline of what will be included in the BRMIMP. Please ensure that the BRMIMP includes a revegetation/restoration plan to address the project s temporary impacts. In addition, please identify when the applicant intends to provide a draft BRMIMP.

RESPONSE:

The Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) is currently being prepared. An outline is attached. The BRMIMP will be completed by August 30, 2000.

BRMIMP Outline

Section 1 Purpose and Use of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP).

- 1.1 Contents of the BRMIMP
- 1.2 Revisions to the BRMIMP
- 1.3 Maintaining and Distributing the BRMIMP

Section 2 Mitigation Measures Incorporated into the Project Design

- 2.1 Pre-Construction
- 2.2 During Construction
  - 2.2.1 Santa Ana Sucker
  - 2.2.2 California Gnatcatcher
  - 2.2.3 Santa Ana Wooly Star
  - 2.2.4 San Bernardino Kangaroo Rat
  - 2.2.4 San Diego Black-Tailed Jackrabbit
  - 2.2.5 Southwestern Pond Turtle
- 2.3 Post Construction
  - 2.3.1 Santa Ana Sucker
  - 2.3.2 California Gnatcatcher

2.3.3 Santa Ana Wooly Star
2.3.4 San Bernardino Kangaroo Rat
2.3.5 San Diego Black-Tailed Jackrabbit
2.3.6 Southwestern Pond Turtle

Section 3 Permits

3.1 California Department of Fish and Game
3.2 Army Corp of Engineers/404 Nationwide Permits
3.3 Santa Ana Regional Water Quality Control Board/404 Water Quality Certification
3.4 Endangered Species Act/7 Consultation
3.5 California Endangered Species Act/2080.1
3.6 CEC Certification and Special Requirements

Section 4 Schedule

Section 5 Responsibilities of Parties

5.1 Responsibilities of the Participants
5.1.1 Agency Responsibilities
5.1.2 Responsibilities of Monitoring Biologists
5.1.3 Responsibilities of the Generating Company and Contractors
5.2 Qualifications of the Monitoring Biologists
5.2.1 Designated Biologist
5.2.2 Field Biologists
5.3 Authority and Lines of Communication
5.3.1 Regulatory Agencies
5.3.2 Roles and Authorities of Monitoring Biologists
5.3.3 Roles and Authorities of the Generating Company; Contractors; and Construction Crews

Section 6 Worker Environment Awareness Program

6.1 Content of Worker Environmental Awareness Program
6.2 Frequency and Documentation of Training

Section 7 Preconstruction Monitoring
7.1 Preconstruction Surveys, Mapping, and Aerial Photography
7.1.1 Plant Surveys
7.1.2 Wildlife Surveys
7.1.3 Designation of Avoidance Areas
7.2 Monitoring Measures by Project Component
7.2.1 Plant Site
7.2.2 Proposed Natural Gas Supply Line (Route 1)

7.2.3 Proposed Natural Gas Supply Line (Alternate Route 2)
7.2.4 Wastewater Discharge Line
7.3 Reporting of Preconstruction Survey Results
7.3.1 Mapping
7.3.2 Reporting

Section 8 Construction Monitoring
8.1 Monitoring Measures by Project Component
8.1.1 Plant Site
8.1.2 Proposed Natural Gas Supply Line (Route 1)
8.1.3 Proposed Natural Gas Supply Line (Alternate Route 2)
8.2 Post — Construction Cleanup and Reclamation Measures by Project Component
8.2.1 Plant Site
8.2.2 Proposed Natural Gas Supply Line (Route 1)
8.2.3 Proposed Natural Gas Supply Line (Alternate Route 2)

8.3 Post Construction Monitoring Measures by Project Component
8.3.1 Plant Site
7.3.3 Proposed Natural Gas Supply Line (Route 1)
7.3.4 Proposed Natural Gas Supply Line (Alternate Route 2)
8.4 Construction and Post — Construction Reporting

Section 9 Offsite Compensation

Section 10 Measures to be Implemented During Facility Closure

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Technical Area	**Biological Resources**

REQUEST:

23. Please provide a discussion of whether this project will need to be consistent with the MSHCP goals. If the Applicant has been in contact with MSHCP staff, please identify the contact.

RESPONSE:

Contact has been made with the coordinator of San Bernardino s Multi Species Habitat Conservation Plan (MSHCP). (CDFG Robin Mallone Rames) The project is consistent with the MSHCP goals, which involves habitat protection by avoiding disturbance and encouraging preservation. The pipeline is proposed to be placed along major roadways and avoid any potential habitat. The power plant construction will occur on the existing site in a region that is not considered habitat. Therefore, the proposed project is fully consistent with the San Bernardino MSHCP.

Contact information for:
Robin Mallone Rames (714) 817-0585
Fish and Game (563) 590-5132.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

24. Please provide a discussion of expected light and noise impacts on the sensitive species identified as likely to occur near the proposed generator units.

RESPONSE:

The site is currently being used as a power plant and is surrounded by other noise and light generating facilities, including an airport across the river and a tile manufacturing facility adjacent to the site. Wildlife species found in the area have become adapted to a higher noise and light level from living in proximity to these facilities than would species living in a more pristine environment.

The only sensitive species of bird found during surveys in the summer of 1999 was the Cooper s Hawk, a California Species of Special Concern. The Cooper s Hawk is a raptor species with large territory unlikely to be affected by the changes in noise and light, as it has the option to move a short distance to another roosting area. If nesting in the trees along the Santa Ana River, however, the increase in noise from construction may cause abandonment of the nest. The Hawks begin their nesting period around March and are bound to the nest for 2-3 months. To evaluate the potential for construction impacts, a pre-construction raptor survey will be conducted and if there are indications of a nesting pair, construction should be delayed until after the nesting period.

Small mammals may be affected, including a Federal Species of Special Concern, the San Diego Black-tailed Jackrabbit. This species is most active during the early evening through the early mornings; therefore changes in lighting could affect nocturnal predation of this species. The species undergoes diurnal movement of 2 to 10 miles from shrub cover in day to open foraging areas at night and is considered a habitat generalist. If disturbed by light and noise, this species can easily change location within its home range.

Mitigation: Increases in light will be minimized by using low-intensity lamps and by shielded lighting around the plant to limit disturbance. Noise levels will be mitigated using the conventions outlined in Section 6.4.3.2 of the AFC. Projected noise levels fall within the County of San Bernardino s nighttime limit of 49 dBA.

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Technical Area	**Biological Resources**

REQUEST:

25. Please discuss the potential for soil erosion and siltation of habitats offsite during operations (e.g. surface water releases into the Santa Ana river), and what methods may be employed to prevent this potential impact.

RESPONSE:

The plant site is located on a relatively flat area. Stormwater with the potential for oil contamination is directed towards an oily water separator and then to the cooling tower basin where it is discharged to the SARI line and utilized as cooling water discharge. All other surface drainage in the vicinity of the site is collected via a system of storm drains, which collect and transport the runoff through oil separators. The water is then drained to the NPDES collection area for retention before discharge to the Santa Ana River. Discharge of the stormwater runoff will be managed in accordance with state and local regulatory requirements and the Stormwater NPDES permit requirements applicable to the site. Best Management Practices (BMPs) are outlined in the Draft Storm Water Pollution Prevention Plan (SWPPP) to limit erosion and siltation during construction and operation. The Draft SWPPP is included as an attachment to Data Response 64. By following the requirements of the SWPPP, the impact of siltation on habitat will be minimized.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

26. Identify the likelihood for a spill of ammonia or sulfuric acid during operations, and the potential impacts a spill could have on sensitive wildlife or plants, or their habitat.

RESPONSE:

The likelihood of an ammonia spill affecting wildlife or habitat is small, as it is approximately 500 feet between the power plant and the natural area. For small spills and leaks, the containment area around the tank is sized to contain the liquid and clean up is relatively simple and in accordance with OSHA procedures and mandates as well as site safety guidelines.

Carbon steel is the suitable material of construction for a low pressure storage for aqueous ammonia. It is not subject to material degradation from corrosion/stress cracking etc. A significant rupture is considered improbable.

In a power plant environment, sulfuric acid is used for pH adjustment, regeneration of resins, and cooling water/waste water treatment. The small amount of acid will be delivered in self-containing totes and any minor spill is contained within containment areas provided; clean up will be relatively simple in accordance with established procedures. The sulfuric acid is located within a secondary containment facility designed to hold the full amount of the tank. If, during use, a pipe were to leak or break, standard hazardous waste containment methods would be used, such as containing the spill with containment and absorbent booms kept on site for such emergencies and the spill would be cleaned up. A spill of sulfuric acid would not affect wildlife or plants as they are located a distance of approximately 500 feet.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

27. Please provide the methodology and justification for the determination of potential and unlikely to occur that are found in AFC Table 6.13-2.

RESPONSE:

Potential for an occurrence means that the species is either historically or currently known to be within the project region, not just the area, and that the area contains suitable habitat for that species. Unlikely to occur means that a species is either historically or currently known to be within the region and/or project area, but the region is too disturbed for the species to occur there.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

Please provide a discussion of:

28. Whether the expected levels of nitrogen (as presented in the Project Description, AFC pg. 2-30) would/would not impact nearby riparian, wetland, and alluvial fan scrub habitat and soils.

RESPONSE:

As discussed in Section 6.8.3.2 of the Application for Certification (AFC), the MVPC project will emit oxides of nitrogen (NOx) as a product of combustion of fuels at the plant. Very effective control technology will be utilized to reduce these emissions to very low levels of 2.5 ppm in the turbine exhaust streams. Once emitted, the NOx will form other compounds in the air such as nitrogen dioxide (NO_2) and nitrates, a particulate aerosol. At the federal level, beside the primary ambient air quality standards (AAQS) that have been set to protect human health (see Table 6.8-1 in the AFC), secondary standards have been set to protect public welfare, which generally applies to the protection of such things as plants and soils. In most cases, the secondary standards are equivalent or less stringent than the primary standards. The federal secondary standards for NO_2 and particulates (PM_{10}) are equivalent to the primary standards for these two pollutants.

Table 6.8-41 in the AFC shows that the maximum impact from the project emissions will be 0.61 ug/m^3 of NO_2 or less than 1% of the annual primary and secondary standard of 100 ug/m^3. Maximum PM_{10} concentrations were predicted to be 7% of the daily federal AAQS of 150 ug/m^3 and 4% of the annual federal AAQS of 50 ug/m^3.

At these levels, nitrogen compounds will not significantly impact nearby riparian, wetland, and alluvial fan scrub habitat and soils.

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

Please provide a discussion of:

29. How groundwater pumping on-site would affect the riparian community, and any sensitive species found in adjacent sensitive areas, in the vicinity of the power plant.

RESPONSE:

Pumping groundwater from the on-site production wells will not affect the riparian community along the Santa Ana River or any sensitive species in the vicinity of the power plant. Groundwater pumped from the on-site wells does not come from the shallow water table aquifer beneath the site but rather from the confined lower aquifer at a depth of greater than 700 feet below ground surface. Groundwater extracted from this lower aquifer is not replaced by water percolating from the middle or shallow aquifer above through the overlying aquitard, but rather by lateral subsurface inflow within the lower aquifer. As a result, pumping from the lower aquifer will not result in a lowering of the water table in the shallow aquifer and therefore will not affect water levels beneath the Santa Ana River or the riparian community.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

Please provide a discussion of:

30. Any proposed or approved bridge improvements or stream bank installations by San Bernardino County, City of San Bernardino, City of Redlands, or CalTrans that cross the same waterways (for approximately 1 mile upstream and downstream) to be used for project s natural gas and water pipelines. The discussion should evaluate the cumulative impacts to sensitive species of multiple proposed actions occurring at the same time, if appropriate. Alternatively, please provide confirmation that these jurisdictions do not have bridge or stream bank projects that could result in a cumulative impact.

RESPONSE:

After contact with the following people, it has been determined that there are no significant projects occurring in the areas in question:

Mike Fox, San Bernardino Flood Control District
Dee McLain, San Bernardino Department of Transportation
Ray King, Cal Trans District 8

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

Please identify for each alternative route:

31. Total acres of raparian or wetland habitat that would be permanently or temporarily impacted by construction of the natural gas pipeline [if trenching becomes the only feasible alternative].

RESPONSE:

	Temporarily Impacted	**Permanently Impacted**
Acres of Riparian or Wetland Habitat		
Alternate Route 1	0 acres	0 acres
Alternate Route 2	0 acres	0 acres
Alternate Route 3	0 acres	0 acres

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
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Technical Area	**Biological Resources**

REQUEST:

Please identify for each alternative route:

32. Total acres of Delhi sands soil that would be permanently or temporarily impacted by construction of the natural gas pipeline.

RESPONSE:

	Temporarily Impacted	**Permanently Impacted**
Delhi Sands		
Alternate Route 1	79.53 acres	0 acres
Alternate Route 2	18.14 acres	0 acres
Alternate Route 3	0 acres	0 acres

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

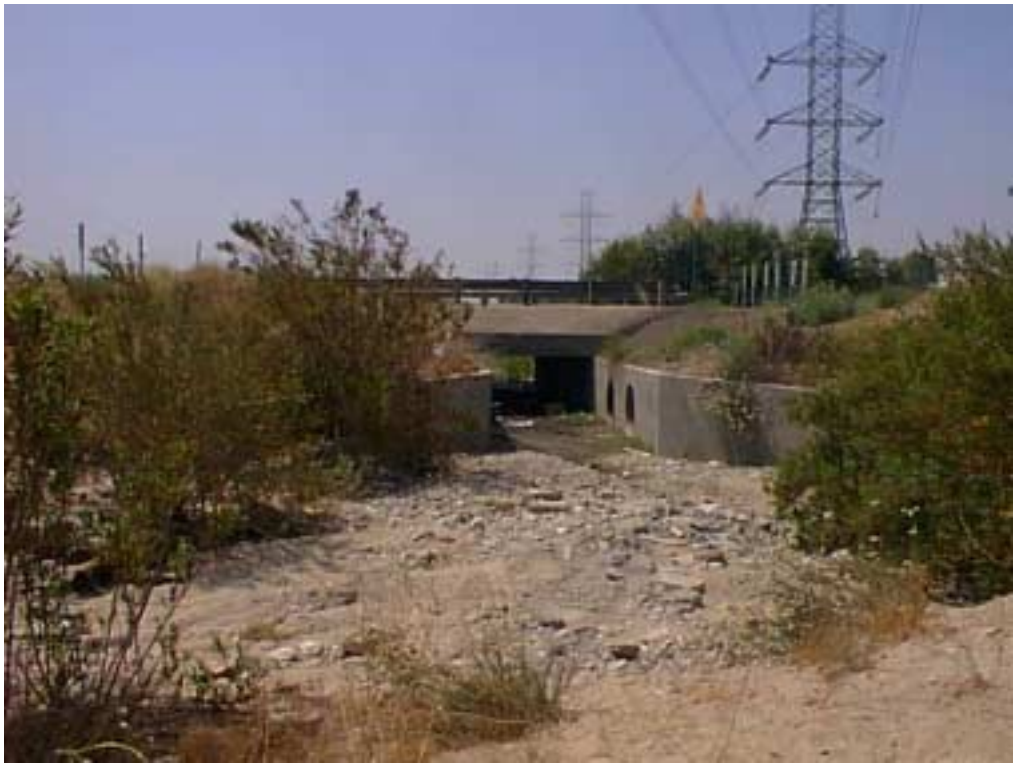
REQUEST:

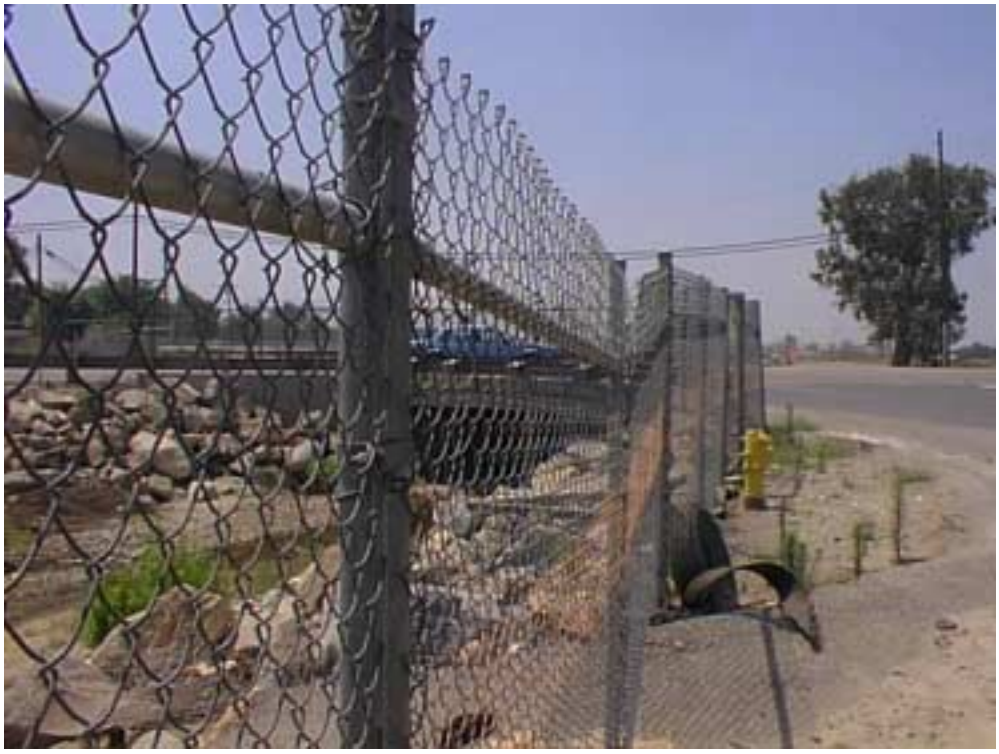
Please identify for each alternative route:

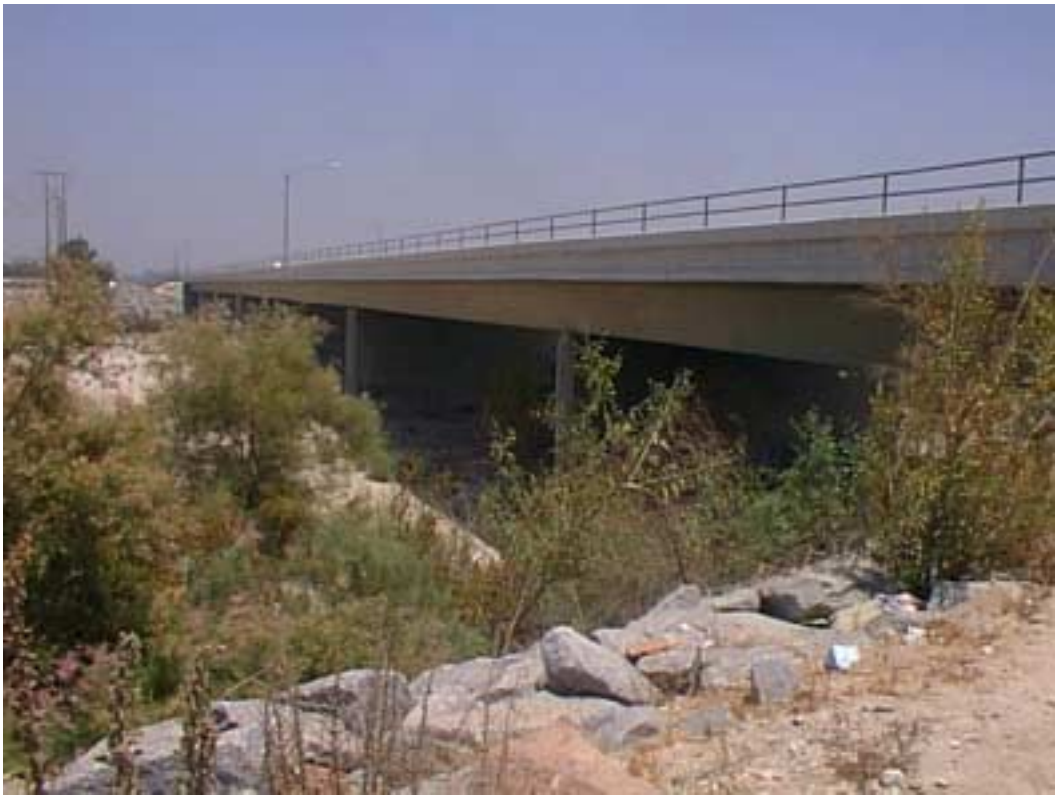
33. if any alternatives were considered to reduce project impacts to riparian habitats, alluvial fan sage scrub, Delhi sands, wetlands, and other sensitive habitat types.

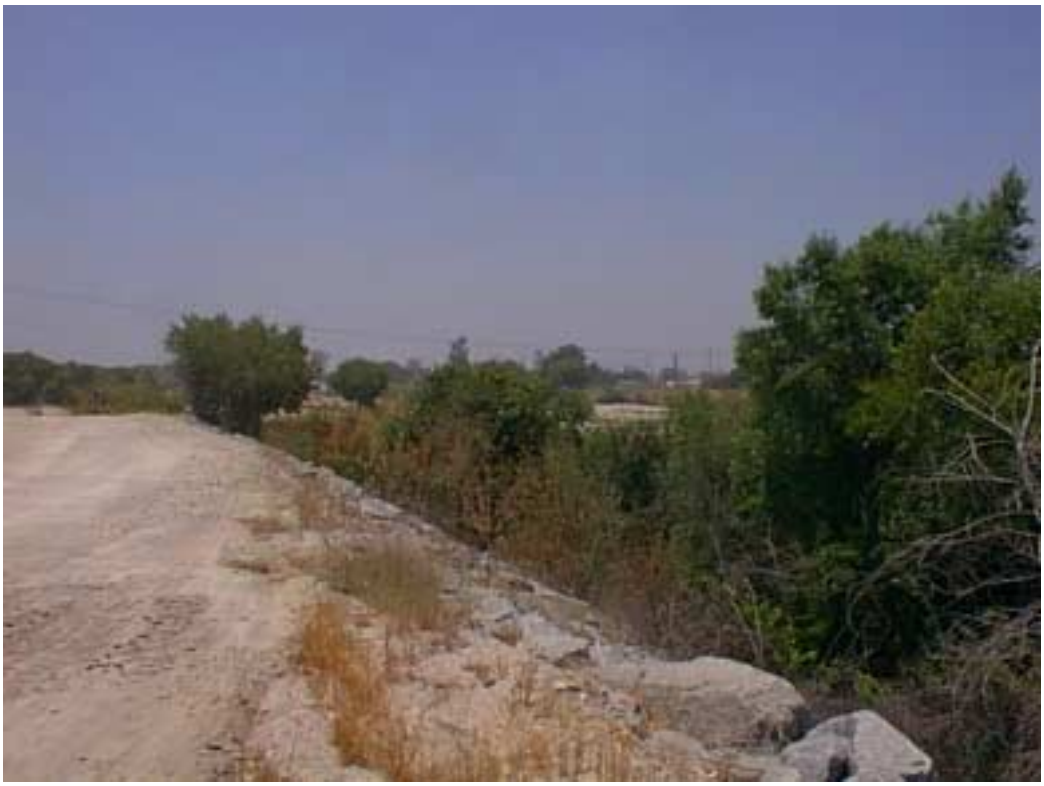
RESPONSE:

Three alternates are listed under the Alternatives section. Further study of alternates 2 and 3 has been completed to assess the differences in biological importance. Each of the alternate routes utilize the crossing at Santa Ana River, the most significant proposed biological change. Alternate 2 proposes to cross the Etiwanda Creek at another location: the intersection of Foothill Blvd. and Cucamonga Street. The two potential crossings of Etiwanda Creek share similar vegetative and physical characteristics. After extensive survey, sensitive habitats were not found. (See attached photographs taken along the proposed alternative 1 routing.)









MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

34. Please describe both communities (if present) including location, acreages, and whether potential impacts would be temporary or permanent.

RESPONSE:

The area of the Southern Cottonwood Willow Riparian Forest (designated Rip in Figure 6.13-2a) is approximately 7 acres and is located along the southern bank of the Santa Ana River. There are few potential impacts expected during pipeline installation, as the riparian area does not occur within the 100-foot construction right-of-way. Communities designated as Southern Riparian Scrub have not been located (based on surveys and site analysis, October 1999).

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

35. In AFC Figure 6.13-4, two areas are identified as *Juglans* that appear to have a combined size of slightly over an acre.

    a. Please identify the species of this *Juglans* in the species list.

    b. If these areas are *Juglans californica* var. *californica*, please address as a sensitive community (see above), because this community (Southern California Walnut Woodland) is recognized by the state as sensitive.

RESPONSE:

a. The scientific name of the species indicated in Figure 6.13-4 is *Juglans californica*.

b. In San Bernardino County, the association of Southern California Walnut as a woodland is considered sensitive habitat. Although previously indicated on Figure 6.13-4 as a community of Southern California Walnut, the areas on the figure were in fact only two individual trees, not woodland. Modifications have been made to clarify the figure.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area	**Biological Resources**

REQUEST:

36. Please provide some discussion on the potential for direct temporary or permanent and indirect impacts on the following sensitive plant species:

    a. Marsh sandwort (*Arenaria paludicola*) — Federally and state-listed endangered; grows amongst *Scirpus* species and *Typha* species in freshwater marshes and slow water environments.

    b. Nevin s barberry (*Berberis nevinii*) - Federally and state-listed endangered; found in sandy/gravelly alluvial scrub.

    c. Thread-leaved brodiaea (*Brodiaea filifolia*) - Federally and state-listed endangered; found in coastal scrub and grasslands in clay soils.

    d. Slender-horned spineflower (*Dodecahema leptoceras*) - Federally and state-listed endangered; found in alluvial scrub.

RESPONSE:

The potential for the following plants to occur within the footprint of the project was assessed based on multiple surveys of the project site in 1999.

a. *Arenaria paludicola* — Marsh sandwort

The marsh sandwort is usually found in boggy meadows and marshes or in freshwater swamps. It has been reported along the Santa Ana River. Its occurrence in the field site is unlikely. Much of the area has been disturbed, and no permanent swampy area was present.

b. *Berberis nevinii* — Nevin s barberry

Nevin s barberry is a shrub some 3 to 12 feet high with pinnate compound leaves which have spinose teeth. It is generally found in gravelly soils or washes in coastal sage scrub. Although there were gravelly areas in the project site, Nevin s barberry was not observed. Since it is a shrub with

characteristic leaves, its presence would likely have been noted.

c. *Brodiaea filifolia* — thread-leaved brodiaea

Thread-leaved brodiaea is generally found in heavy clay soil, such as in vernal pools in coastal sage scrub. No vernal pools or suitable habitat was found in the project site. Most areas were disturbed, and the presence of the thread-leaved brodiaea is highly unlikely.

d. Dodecahema leptoceras — slender-horned spineflower

The slender-horned spineflower is a low, spreading plant with tiny white or pink flowers. It is commonly found on alluvial sand or in sandy places of coastal sage scrub. It blooms from April to June. Surveys were made during the blooming period of the slender-horned spineflower, and it was not observed on the sandy alluvial areas of the Santa Ana River floodplain. It would not be expected in areas of the wash because of the transient nature of the substrate. In a survey made in December of 1995, no skeletons of the spineflower were observed on the sand of the alluvial fan.

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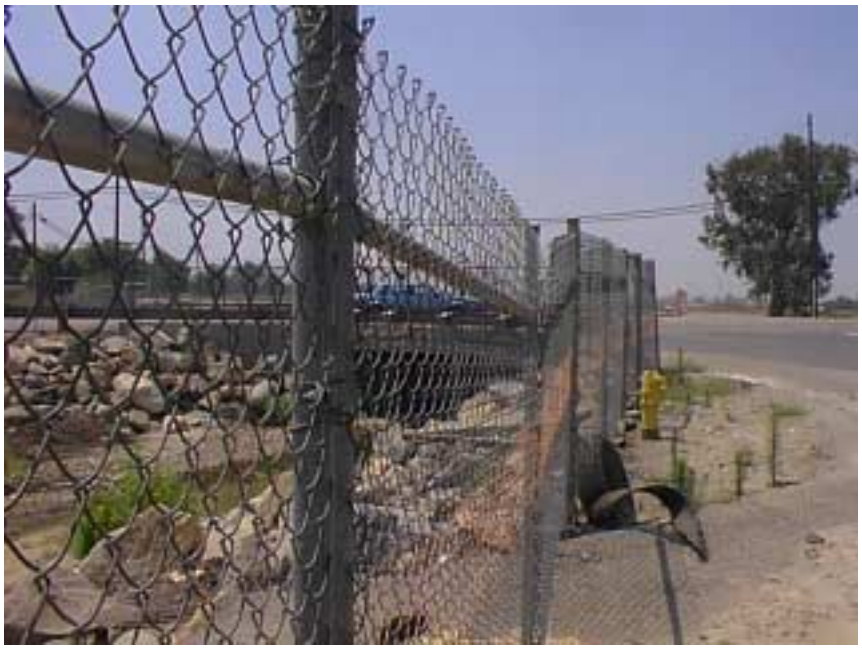
Technical Area	**Biological Resources**

REQUEST:

37. Please provide revised AFC Figures 6.13-3, 4, 5, 6 to provide vegetation communities for all mapped areas. For example, on Figure 6.13-3, large areas within the Santa Ana River, north of the water and east of the railroad are not designated.

RESPONSE:

Figures 6.13-4, 5, and 6 are vegetation maps outlining the species composition of the Santa Ana River, Twin Creek Channel, and Etiwanda Wash. The majority of the maps detail the bottom part of the waterways, where composition is limited due to large open sand areas characteristic of a river bottom. These areas are swept clean annually during the winter months and tend to be in a continuous stage of primary succession. The plants found in this area are sparsely distributed along the bottom and tend to be separated by large open spaces. The attached photo is an example of the typical vegetation found along the Santa Ana River bottom. (Please see attached for photos and amended figures.)



Question 33: Alternate 2: Etiwanda Creek at
East Ave. and Foothill Blvd.

Question 37 and 38. Sample vegetation photo detailing sparse composition along Santa Ana River bottom

ATTACHMENT — BIO-37A

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Biological Resources**

REQUEST:

38. Please identify sensitive plant communities on Figures 6.13-3, 4, 5 and 6.

RESPONSE:

Surveys and community delineation were completed using the Holland Index (1986), which uses species composition to identify a plant community. After completing the vegetation survey in 1999 it was established that there were no sensitive plant communities within the area. The species compositions within the survey boundaries are indicated on Figures 6.13-3,4,5, and 6. Revised figures are attached to Data Request 37 as requested.

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

Technical Area **Cultural Resources**

REQUEST:

39. Please provide a copy of the correspondence received or a summary if the response was a phone call, if any Native Americans responded to the notification letters sent by the applicant? Please address whether there has been consultation with members of the Native American community. If Native Americans have expressed concerns regarding cultural resources in the project area, please discuss how the applicant will address those concerns.

RESPONSE:

Six letters regarding potential cultural resources near the Mountainview Power Plant Project were sent to the following institutions and/or individuals: Native American Heritage Commission, San Manuel Band of Mission Indians, Katherine Saubel, Morongo Band of Mission Indians, Gabrielino/Tongva Tribal Council, and Ms. Christine Hernandez. One response has been received from the Native American Heritage Commission stating that no recorded archaeological sites/properties/concerns were identified near the project areas. No phone calls were made to Native American representatives. The letter is attached as Attachment CULT-39A.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

40. In a table please:

a. list each site and isolate identified within _ mile of the proposed project and proposed project linears;
b. briefly describe each site and indicate whether the site is historic or prehistoric;
c. indicate whether each site or isolate lies within or adjacent to the Area of Potential Effect (APE);
d. note whether each site has been determined eligible to the National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR). If it has not, indicate whether it has been proposed for a determination of eligibility; and
e. specify whether the cultural resource site is near the project site or identify the linear that is nearest the cultural resource site.

If information on the requested table may reveal the location of a site, please file the data response under confidential cover.

RESPONSE:

a. Each site and isolate identified within _ mile of the proposed project and proposed project linears are listed in Table CULT-40A.

b. National Old Trails (Highway 66) is identified in Table CULT-40A as the only known Prehistoric site, the remaining sites are listed as Historic.

c. The table indicates the location of each resource near the preferred route and each alternative.

d. National Old Trails (Highway 66) is also listed as the only site eligible for National Register of Historic Places (NRHP) and California Register of Historic Resources (CRHR).

e. The proposed gas pipeline route is located nearest to the cultural resource sites which are indicated on the attached table.

It is the general policy of the California Information Centers that information, especially locations, of archaeological resources should not be released unless the resources stand in danger of potential impact. Therefore, resource information, particularly locations, and resources other than those that are within or tangential to the Area of Potential Effect (APE) and which will not stand in danger of impact, should remain as confidential as possible. Given this reasoning, a table listing the locations of resources within _ mile of the project area that will not be potentially impacted was not prepared.

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
GUASTI QUADRNAGLE							
SBR-7095H	abandoned irrigation system (standpipe)	N	N	N	N	N	N
P1084-1H	historic foundations, possibly late 1800s	N	N	N	N	N	N
P1084-23H	Campanella residence, ca. 1920s (remnants)	N	N	N	N	N	N
SBR-CPHIH	scatter of household trash	N	N	N	N	N	N
P1084-27H	area of multiple historic structures	N	Y	N	N	N	N
P1084-68H	Brandanos/Sundown Hotel	N	N	N	N	N	N
P1084-69H	Heberle Motel & Apartments	N	N	N	N	N	N
P1084-57H	Guidera/Cucamonga Winery	N	N	N	N	N	N
SBR-7199H	former residential/commercial property	N	N	N	N	N	N
SBR-7099H	remnant sewer line	N	N	Y	Y	N	N
SBR-6847H	Atchison, Topeka and Santa Fe RR	Y	Y	N	N	N	N
SBR-2910H/NRHP-E-OHP-3926*	National Old Trails/Route 66	Y	N	Y	N	N	N
FONTANA QUADRANGLE							
PSBR-50H	area of historic structures	N	Y	N	N	N	N
PSBR-8040H	possible remains of privy	N	N	N	N	N	N
P1073-44H	wood frame single family dwelling	N	N	N	N	N	N
P1073-45H	Anglo Colonial style single family dwelling	N	N	N	N	N	N
		N	N				

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
P1073-46H	single family residence			N	N	N	N
P1073-47H	Redwing Motel Complex, 1944	N	N	N	N	N	N
P1073-10H	historic property	N	N	N	N	N	N
P1073-31H	historic property	N	N	N	N	N	N
P1073-42H	Bono s Restaurant, ca, 1938	N	N	N	N	N	N
CPHI-2335-1	historic structure	N	N	Y	N	N	N
P1073-3H	American Legion/Boy Scout Building	N	N	N	N	N	N
P1073-33H	Slovene Hall	N	N	N	N	N	N
CPHI-96/P1073-16H	Fontana Woman s club	N	N	N	N	N	N
P1073-19H	Pacific Electric Depot	N	N	N	N	N	N
P1073-20H	Fontana Union Water Company	N	N	N	N	N	N
P1073-21H	Conklin Building	N	N	N	N	N	N
P1073-22H	Kreis Building	N	N	N	N	N	N
CPHI-101	Sinclair Commercial block	N	N	N	N	N	N
P1073-23H	Chomal Block	N	N	N	N	N	N
P1073-24H/CPHI-101	Sinclair Block	N	N	N	N	N	N
CPHI-97/P1073-15H	Fontana Community Church	N	N	N	N	N	N
P1073-1H	Saint Joseph s Church	N	N	N	N	N	N
P1073-2H	Fontana Mercantile	N	N	N	N	N	N
P1073-25H	Commercial buildings - west side	N	N	N	N	N	N
P1073-26H	Commercial buildings - east side	N	N	N	N	N	N
P1073-32H	Fontana Farms #1/CPHI-93/NRHP-L-82-	N	N	N	N	N	N

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
	982						
P1073-11H	Adobe residence	N	N	N	N	N	N
P1073-12H	Hasbrouch residence	N	N	N	N	N	N
P1073-13H	Micallef residence	N	N	N	N	N	N
P1073-14H	Gazvoda residence	N	N	N	N	N	N
P1073-17H	Boyle residence	N	N	N	N	N	N
P1073-18H	MacGregor residence	N	N	N	N	N	N
P1073-37H	Junior High School	N	N	N	N	N	N
P1073-43H	orange shaped orange juice stand	N	N	N	N	N	N
P1073-29H	Fontana Historical Society Office	N	N	N	N	N	N
P1073-30H	Fontana Fire Department	N	N	N	N	N	N
P1073-1H	St. Joseph s Church	N	N	N	N	N	N
P1073-41H	wood frame two story residence	N	N	N	N	N	N
P1073-27H	Fontana Farms Garage	N	N	N	N	N	N
P1073-36H	Evergreen Lodge & cabins	N	N	N	N	N	N
P1073-39H/CPHI-94	US Experimental Rabbit Station	N	N	N	N	N	N
P1073-40H	Fontana Farms Administration Building	N	N	N	N	N	N
P1073-3H	American Legion Hall/Boy Scout Lodge	N	N	N	N	N	N
CPHI-99H	Miller Park	N	N	N	N	N	N
P1073-28H	Fontana Theater	N	N	N	N	N	N
P1073-34H	Fontana Farms Camp #4	N	N	N	N	N	N
P1073-38H	Fontana Farms Tract Office, County Library	N	N	N	N	N	N

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
SAN BERNARDINO SOUTH QUADRANGLE							
P1074-61H	old road remnant	Y	Y	Y	Y	N	N
P1074-88H	ditch	Y	Y	Y	Y	N	N
CPHI-53H	railroad	N	N	N	N	N	N
P1074-119H	ditch	N	N	N	N	N	N
IA-12	isolated prehistoric find	N	N	N	N	N	N
CPHI-7	National Orange Show	N	Y	N	N	N	N
CPHI-63	Mormon flour mill	N	Y	N	N	N	N
P1074-25H	Rialto Adobe	N	N	N	N	N	N
P1074-36H	historic structure	N	N	N	N	N	N
P1074-74H	historic area	N	N	N	N	N	N
P1074-53H	historic property	N	N	N	N	N	N
P1074-49H	historic structure	N	N	N	N	N	N
P1074-128H	historic property	N	N	N	N	N	N
P1074-64H	Moffatt House	N	N	N	N	N	N
P1074-18H	First Christian Church	N	N	N	N	N	N
P1074-19H	Rialto Elementary School	N	N	N	N	N	N
P1074-17H	First Methodist Church	N	N	N	N	N	N
P1074-62H	Humphrey House	N	N	N	N	N	N
P1074-63H	Crowder Building	N	N	N	N	N	N
SBR-6865H	cement structure, possibly related to sewer	N	N	N	N	N	N
P1074-16H	First Congregational Church	N	N	N	N	N	N

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
P1074-23H	Semi Tropic Land and Water Co.	N	N	N	N	N	N
P1074-26H	P. A. Raynor home, 1970s	N	N	N	N	N	N
P1074-20H	Rialto Hotel, 1888	N	N	N	N	N	N
P1074-65H	Martin Residence	N	N	N	N	N	N
P1074-24H	Lytle Creek Water and Improvement Co.	N	N	N	N	N	N
P1074-195H	Wigwam Motel	N	N	N	N	N	N
PSBR-26H	Water transportation	Y	Y	Y	Y	N	N
SBR-7168H	Gage Canal	Y	Y	Y	Y	N	N
PSBR-85H	Water transportation	Y	Y	Y	Y	N	N
SBR-6565H	historic structure	N	N	N	N	N	N
SBR-6564H	historic structures	N	N	Y	N	N	N
P1074-119H	Raynor Springs Ditch - 1852	N	N	Y	N	N	N
SBR-4129H/CPHI-88	Home of Neighborly Service	N	N	N	N	N	N
P1074-47H	commercial district	N	N	N	N	N	N
P1074-28H	Water transportation	Y	Y	N	N	N	N
P1074-45H	Santa Fe Roundhouse	N	N	N	N	N	N
P1074-59H	cottage	N	N	N	N	N	N
P1074-54H to 57H	architectural points of interest	N	N	N	N	N	N
P1074-121H	Santa Fe Viaduct	N	N	N	N	N	N
P1074-60H	apartments	N	N	N	N	N	N
P1074-21H	Santa Fe Depot, 1888	N	N	N	N	N	N
P1074-197H	Ingram House	N	N	N	N	N	N

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
P1074-160-184H	structures between 6th & 7th and F & G	N	N	N	N	N	N
P1074185H-194H	structures	N	N	N	N	N	N
P1074-58H	residences on the 800 block of 7th Street	N	N	N	N	N	N
P1074-51H	Arrowhead Baptist Church	N	N	N	N	N	N
P1074-41H/CPHI-106	St. Bernardine s	N	N	N	N	N	N
P1074-40H	Women s Club Building	N	N	N	N	N	N
CPHI-67	point of interest	N	N	N	N	N	N
SBR-7139	Marigold Farms	N	Y	N	N	N	N
SBR-6100H	Railroad spur	N	Y	N	N	N	N
SBR-8070H	California Hotel, ca. 1927	N	N	N	N	N	N
CPHI-60H	Fred T. Perris House Site	N	N	N	N	N	N
CPHI-103	San Bernardino California Theatre	N	N	N	N	N	N
P1074-43H	Woolworth Building	N	N	N	N	N	N
P1074-44H	Harris Building	N	N	N	N	N	N
SBR-4288H/CPHI-90	Andreson Building	N	N	N	N	N	N
P1074-37H	Eagle s Hall	N	N	N	N	N	N
P1074-46H	Pioneer Title Insurance Company	N	N	N	N	N	N
CPHI-15	point of interest	N	N	N	N	N	N
CPHI-62	Mormon Schools Site	N	N	N	N	N	N
CPHI-44	point of interest	N	N	N	N	N	N
CPHI-5	Atwood Adobe	N	N	N	N	N	N
P1074-128H	historic property	N	N	N	N	N	N

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
P1074-14H/CPHI-112	Cox-Bradley Adobe	N	N	N	N	N	N
SBR-8062H	historic property	N	N	N	N	N	N
SBR-8061H	historic property	N	N	N	N	N	N
CPHI-24	point of interest	N	N	N	N	N	N
SBR-8071H/NRHP-L-85-136	historic structure	N	N	N	N	N	N
CPHI-102	Heritage House	N	N	N	N	N	N
P1074-52H	Victorian House, 439 West 8th	N	N	N	N	N	N
SBR-2794	Old Victory Village site/mortars & metates	N	N	N	N	N	N
PSBR-4H	Sawpit Canyon Road	N	N	Y	Y	N	N
SBR-8695H	privy deposits/refuse dump, excavated 1995	N	N	N	N	N	N
SBR-7816H to 7827H	historic urban residential properties	N	N	N	N	N	N
P1074-93H	Daley Ditch	N	N	Y	Y	N	N
P1074-92H	St. Bernard/Davis Mill Ditch	Y	Y	Y	Y	N	N
P1074-103H	Mill	N	Y	N	N	N	N
SBR-7138H	abandoned building foundations	N	N	N	N	N	N
SBR-5554H	Martin Adobe structure1856/1857	N	N	N	N	N	N
P1074-22H	Packing House Row	N	N	N	N	N	N
P1074-122H	Inland Lake	N	N	N	N	N	N
SBR-6796H	unmarked historic cemetery	N	N	N	N	N	N
PSBR-43H	historic property	N	N	N	N	N	N
		N	N				

Table CULT-40A
Sites and Isolates Identified Within _-Mile of the Proposed Project and Proposed Project Linears

Resource No.	Description	Within APE	Area of Project Impact				Pavement
			Preferred	Alt 1	Alt 2	Staging Area	
SBR-4130H	Eternity Jewish Cemetery			N	N	N	N
SBR-7059H	relatively modern trash pits	N	N	N	N	N	N
P1074-39H	Hunt House	N	N	N	N	N	N
P1074-42H	Site of Mormon Stockade	N	N	N	N	N	N
P1074-15H	Allen Iron Works	N	N	N	N	N	N
P1074-10H	Mormon Council House	N	N	N	N	N	N
P1074-13H/CPHI-100	Sturges House	N	N	N	N	N	N
P1074-12H	Opera House Site	N	N	N	N	N	N
P1074-8H	Old Courtroom site	N	N	N	N	N	N
P1074-39H	Kite Route Station building	N	N	N	N	N	N
P1074-196H	Valley Auto Supply	N	N	N	N	N	N
SBR-7841H	historic foundation remnants	N	N	N	N	N	N
SBR-4191H	historic structure	N	N	N	N	N	N
SBR-7975H	historic debris scatter in vacant lot	N	N	N	N	N	N
SBR-7842H	remains of Platt Building	N	N	N	N	N	N
P1074-11H	Pavillion Site	N	N	N	N	N	N
P1074-9H	Jefferson Hunt House Site	N	N	N	N	N	N
P1063-68H	Structures (part of SBR-7139H)	N	N	N	N	N	N

*The National Old Trails (Highway 66) is the only site/isolate listed as a Prehistoric site, all others are listed as Historic. National Old Trail is also listed as the only site eligible for National Register of Historic Places (NRHP) and California Register of Historic Resources (CRHR).
Key: Y = Yes; N = No

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

41. Please provide a discussion of the natural gas line which includes the diameter of the line and the width and depth of the trench in which it will be buried. Please also address additional procedures, if any, if the ground disturbance related to trenching for the natural gas line extends outside the 50-foot wide surveyed APE.

RESPONSE:

The proposed pipeline is planned to be 24-inch diameter. The pipeline will be installed in a trench primarily through paved streets. The trench will be an average of 36-inches wide. Depth of the trench will vary depending on crossings of existing substructures. The minimum trench depth will be 5 feet. If routing changes are required, appropriate measures are taken to address the change in alignment and impact, if any on the environmental issues. The pipeline is within paved city roadways, which vary from 80 to 100 feet in width.

The minimum trench depth is 5 feet to obtain 42-inches minimum cover to the top of the pipe which will range from 24 to 30 inches in diameter. The maximum trench depth excavated will be to clear substructures along the route. For example, a storm drain box is usually the largest substructure. A box 10 feet high by 12 feet wide with 4 feet of cover will require a pipeline crossing depth of 16 feet to top of pipe allowing for two feet of clearance. The average depth of a pipeline through city streets would typically be approximately 6 feet to top of pipe

Roadways along the route vary in width from one street to the other. Major arteries such as Rialto and Arrow Highway are wider than San Bernadino or Mountainview because they are typically 4 lanes or more. The road widths of 80 to 100 feet were estimated. Actual widths were not measured or surveyed.

A typical plan along city streets with curb and gutters would align the pipeline in the paved section of roadway between the two curbs. Portions of the route do not have curb and gutters. Along these sections the pipeline may divert off the paved road to the dirt shoulder, but the pipeline alignment would be planned to stay within the county /city road right-of-way, if possible.

A staging area will be used to process and screen the soil for backfill. At the

same location or another location (two locations total) a construction office would be established which will be used for small materials storage, fabrication work and meeting area in the morning for work direction. The staging area and construction office area will occur in an area approximately 30,000 to 80,000 square feet.

In addition the work area from the installation of the pipeline will move along the road. Personnel, equipment, trucks, pipe and pipe trucks will also move along the road. The work area is about 2,000 to 3,000 feet in length as it moves along. Since work will progress from an average of 300 to 500 feet per day, areas ahead of the work area would require open access for the next days work as well as the previous days work that were covered up.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

42. The discussion in the AFC (p. 6.2-10) is not clear concerning whether the 2.3-mile wastewater supply line was surveyed. Please verify whether the line was surveyed. If it was not surveyed, please survey it and provide the results.

RESPONSE:

The 2.3-mile wastewater supply line is an existing line owned by the City of Redlands on San Bernardino Avenue and will not require new construction by MVPC.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

43. Please add the wastewater supply line, the wastewater discharge pipeline connector, any existing or proposed wells, and existing or proposed access roads to the confidential maps of Cultural Resource Locations, 1a, 1b, & 1c. Please also add the APE and survey corridor and any cultural resources identified in the records search or cultural resources survey along these two water routes. Also identify the location of any potential over or under crossings of a river or creek.

RESPONSE:

Originally, the proposed project required the construction of a 2.3-mile wastewater supply line running from the City of Redlands WWTP to the proposed facility. However, it has been determined that an existing water line connecting the two areas will provide sufficient water. The proposed project will now only require the installation of a short connection on MVPC property to this existing line.

By using another pre-existing waterline owned by MVPC, there is no need to install a discharge line. A short (200) connector must be installed in a golf course. The wastewater discharge pipeline connector will require a trench approximately 18-inches wide and 36-inches deep. The trench will be constructed in previously disturbed and impacted soil that was regraded in order to develop the San Bernardino Golf Course. Therefore, there is no potential for cultural resources to be located in the APE of the wastewater discharge pipeline connector.

The Cultural Resource Locations Figures 1a, 1b and 1c have been revised to include the wastewater discharge pipeline connector, two existing water wells located on the power plant, an existing access road and contractor s gate, and locations of potential crossings over or under rivers and creeks. No wells or access roads are proposed.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

44. Please provide a discussion concerning the depth and width of the trenches in which the water lines would be placed and any other areas that would be disturbed by construction of the water lines. Also address the area of disturbance surrounding any new wells.

RESPONSE:

By use of a pre-existing waterline owned by MVPC, only a short connector in a golf course is required for a water discharge. The existing line owned by the City of Redlands on San Bernardino Avenue and will not require new construction by MVPC.

By use of pre-existing waterline owned by MVPC, only a short connector in a golf course is required for watewater discharge. The connector will require a trench approximately 18-inches wide and 36-inches deep located adjacent to the Twin Creek Channel. The trench will be constructed in previously disturbed and impacted soil that was regraded in order to develop the San Bernardino Golf Course. The wastewater discharge line will cross the Twin Creek Channel at the San Bernardino Golf Course bridge. The pipeline crossing at this location will be hung along the north side of the existing golf cart bridge. It has been determined that this bridge was constructed in 1976 (see attachment CULT-44A).

Since the trench will be constructed in previously disturbed and impacted soils, there is no potential for cultural resources to be located in the APE of the wastewater discharge pipeline connector.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

45. Please provide a discussion of the applications of the project that would trigger the need to obtain a Section 404 permit. Also address the process necessary to obtain the permit and provide the name and phone number of a contact or contacts at the appropriate agency or agencies involved with issuing this permit. Please also address whether an archaeological use permit will need to be obtained.

RESPONSE:

The primary potential requirement for a Section 404 permit arises in the proposed possible trenching of the Santa Ana River at Tippecanoe Avenue for the gas pipeline. An alternative route for the gas pipeline also crosses Etiwanda Creek twice. As discussed in several other data responses, there are no other linear facilities, as existing pipeline is being used for reclaim water supply and for water discharge.

Section 404 of the Clean Water Act requires a 404 permit whenever any person or public agency proposes to locate a structure, excavate, or discharge dredged or fill material into waters of the United States. Portions of the Santa Ana River constitute navigable waters of the United States and therefore, if the natural gas supply pipeline is trenched, in a portion of the Santa Ana river that constitutes a navigable waterway rather than bored under the Santa Anna River, a Section 404 permit would be required. The Army Corps of Engineers is tasked with enforcing, evaluating, and permitting Section 404 activities.

Historic properties are one factor that must be considered by the Corps when evaluating a Section 404 permit. The Section 404 permit must comply with the National Historic Preservation Act which regulates historic properties. The 404 permit would also require compliance with other federal acts, such as the Endangered Species Act.

The Los Angeles District Headquarters of the Corps has jurisdiction over the project region and the Santa Ana River. They are located at 911 Willshire Boulevard, PO Box 532711, Los Angeles, CA 90053. The Santa Ana River Project Branch can be contacted at (213) 452-4037.

MVPC has initiated contact with the Los Angeles district of the Army Corps and

anticipates resolving the final issues of applicability and process regarding a 404 permit. MVPC intends to proceed with the intention of obtaining a 404 permit until circumstances warrant that a 404 permit will not be necessary. That would clearly arise if boring is the method of installing the gas pipeline under the Santa Ana River.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Cultural Resources**

REQUEST:

46. Please provide the technical documentation prepared by Applied Earthworks to support the summary presented in the application (the archaeological records check has already been provided).

RESPONSE:

The technical documentation prepared by Applied Earthworks is being concurrently filed under the confidential cover.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Power Plant Efficiency**

REQUEST:

47. Table 1.3-1 of the AFC shows evaporative cooling in use at the 30¡F case, while section 2.1 of the AFC states that evaporative cooling is not employed at this temperature. Please clarify this discrepancy.

RESPONSE:

Table 1.3-1 was in error. Section 2.1 of the AFC is correct, the evaporative cooler will not be employed at 30…F.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area **Geology and Paleontology**

REQUEST:

48. Please revise the project geologic map in the AFC to highlight the location of faults within 30 kilometers of the proposed project footprint, and faults within 1,000 feet of the proposed linear facilities for the project. Please include the Crofton Hills fault, the Banning fault and the Loma Linda fault in your table of nearby faults. Please list the distance from the fault to the proposed project site and the maximum credible earthquake for the faults. Please re-verify the design event earthquake for the proposed project.

RESPONSE:

The design-level earthquake event of no more than a 10 percent chance of exceedance in 50 years (10 in 50) is consistent with the design level event presented to the CEC in previous permit applications and Uniform Building Code (UBC, 2000) guidelines. The peak horizontal ground acceleration of 0.82 g, presented in our November 12, 1999 report, corresponds to the 10 in 50 earthquake event.

The Table of Nearby Faults has been modified as follows:

FAULT TABLE

Fault Name	Mmax	Distance to MVPC (kilometers)
San Jacinto (Loma Linda)	6.8	3
San Jacinto (Main Branch)	6.7	5
San Andreas (southern)	7.4	8
Crofton Hills	6.4*	8
Cucamonga	7.0	16
Cleghorn	6.5	21
Banning	6.7*	26
North Frontal (west)	7.0	27
Chino-Central Ave.	6.7	47
Raymond	6.5	49
Elsinore (Glen Ivy)	6.8	50
Whittier	6.8	55
Clamshell Sawpit	6.5	61
Helendale — So. Lockhart	7.1	62
Pinto Mountain	7.0	69

FAULT TABLE

Fault Name	Mmax	Distance to MVPC (kilometers)
North Frontal (east)	6.7	72
Camprock — Emerson /Homestead Valley/Johnson Valley/Landers	7.5	74
Sierra Madre	7.0	79
Lenwood	7.3	82
* Maximum Magnitude from Ziony, 1986, Earthquake hazards in the Los Angeles Region		

The Mountainview Power Company s San Bernardino facility is located in a CBC Seismic Zone 4 and is approximately 5 kilometers from the San Jacinto Fault (a CBC Type B Near-Source Fault) and approximately 8 kilometers from the San Andreas Fault (a CBC Type A Near-Source Fault). Talking into account the CBC provisions for near-source events the overall seismic design of this facility will be governed by an earthquake event originating along the San Andreas Fault.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Geology and Paleontology**

REQUEST:

49. Please revise the discussion of the Johnson Valley fault to include the Landers earthquake and include the maximum credible earthquake for the Johnson Valley/ Landers fault system to be at least a M_W of 7.5.

RESPONSE:

Please add the following comment to the section on Surface Fault Rupture and Earthquake Ground Shaking - The Landers Earthquake event occurred on June 28, 1992 on a series of faults previously thought to be a separate feature. This event occurred approximately 75 kilometers north of the project site. The earthquake, Magnitude 7.5, was the result of rupture along the Camp Rock-Emerson, Homestead Valley, and the Johnson Valley faults. Strong motion records recovered from a seismic station in Redlands, approximately three kilometers east-southeast from the Project site, showed that ground motions on the order of 0.10g to 0.12 g were felt at that recording station.

Shortly after the Landers event an earthquake on a separate fault system occurred in the San Bernardino Mountains. This event occurred approximately 34 kilometers north of the subject project on a fault which did not exhibit surface rupture. This earthquake is known as the Big Bear event and had a Magnitude of 6.6. The strong motion records recovered from a seismic station in Redlands, approximately three kilometers east-southeast from the project site, showed that ground motions on the order of 0.13g to 0.17 g were felt at that recording station.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Geology and Paleontology**

REQUEST:

50. Use either the 10 percent in 50-year return interval approach to estimate the on-site peak horizontal ground acceleration for the design earthquake or use the maximum credible earthquake for the design earthquake and fault.

RESPONSE:

The probabilistic (10 percent in 50-year) not deterministic, approach was used. See response to Data Request No. 51

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Geology and Paleontology**

REQUEST:

51. Please elaborate how the peak horizontal ground acceleration of 0.82g for the site was determined, and include data, assumptions, and calculations used in determining the peak horizontal ground acceleration for the site. Also please identify the fault and magnitude of the earthquake used to determine the site peak horizontal ground acceleration for the site if the applicant uses a deterministic approach.

RESPONSE:

To estimate the ground shaking used for design of the project, a probabilistic approach was used. The ground shaking was interpolated from a database of ground motions calculated for California showing the 10% in 50 years. Ground motions have been calculated at gridded locations of _ of 1/10 of one degree for the state of California. Accordingly, the four grid coordinates which surround the site were plotted then checked for reasonableness with the surrounding fault configuration then interpolated between the point the site coordinates. The following coordinates were used to estimate the peak horizontal ground acceleration (PGA).

Site Latitude/Longitude: 34.079N/-117.240W

Surrounding coordinates

Latitude	Longitude	Estimated PGA (g)
34.10	-117.25	0.78
34.10	-117.20	0.75
34.05	-117.25	0.99
34.05	-117.20	0.88

The data base containing the gridded coordinates and associated ground motions can be found in the Internet at the USGS website at:

http://geohazards.cr.usgs.gov/eq/html/data.shtml

The deterministic approach to develop peak horizontal ground acceleration was not used for this study.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Geology and Paleontology**

REQUEST:

52. Please provide an analysis to determine if the proposed 24 natural gas pipeline is likely to be ruptured where it crosses the San Jacinto fault during the design earthquake or a major earthquake on the San Jacinto fault. Include all data, assumptions, and calculations supporting the analysis.

RESPONSE:

Internal planning, design and construction guidelines for the mitigation of earthquake-induced geologic hazards are designed for and result in pressure containment — i.e. the chance for a line rupture during a major earthquake is minimized through appropriate mitigation. Although strong ground shaking is a potential cause of damage to above ground gas facilities, and possibly to early vintage pipelines, it is not considered a serious hazard to modern underground pipelines. State of the art seismic review and mitigation measures will be utilized.

The new pipeline will involve a geo-technical hazard evaluation to determine the probability, magnitude and ground displacement of the earthquake fault under study. As recommended under the ASCE Guidelines for the Seismic Design of Oil and Gas Pipeline systems: , a design should be based on the maximum probable fault displacement having a probability of exceedance of 10% in 50 years. Note that these ASCE guidelines are used for the Uniform Building Code. Published geologic data, such as seismic zonation maps and geologic reports, are used to assess the potential hazard and determine the required mitigation to accommodate the expected ground displacements.

The following objectives are considered in the design and construction of a pipeline fault crossing. Any, all or none may be required to mitigate seismic risk, as determined in the geo-technical hazard evaluation:

- Maximize pipeline fault movement capacity
- Increase pipe wall thickness
- Maximize pipe ductility
- Avoid pipe branches, angle points or pipe fittings that would anchor the pipeline against axial movement.

- Avoid alignments that would place pipeline in compression.

This preliminary study suggests that utilizing larger wall thickness (0.500 wall) for up to 1000 feet of pipe where it traverses the fault may be sufficient mitigation. Mitigation may include geofabric wrapping of the pipelines in this area. There were not mitigation benefits identified for installing seismic valves.

The proposed 24-inch gas pipeline crosses a possible surface exposure of the active San Jacinto fault approximately five (5) kilometers miles westerly of the MVPC site. Based on relationships developed by Wells and Coppersmith (1994) which correlate empirical relationships among magnitude, rupture length, rupture width, rupture area and surface displacement, it is estimated that a magnitude 6.8 earthquake could result in a maximum surface rupture of up to 1.5 meters with an average surface displacement o the order of 0.7 meters.

Log (MD) = a+b * M
Log (AD) = a+b * M
Where MD = Maximum Displacement in meters, AD = Average Displacement in meters, a and b are regression coefficients, and M = Earthquake magnitude

Please refer to the following reference for a complete discussion on the equation and relationships.

Wells, D. L and Coppersmith, K.J. 1994, New Empirical Relationships among Magnitude, Rupture Length, Width, Rupture Area, and Surface Displacement: Seismological Society of America Bulletin, v.91, p. 12,587-12,631

Whether this amount of surface displacement would rupture a pipeline ultimately depends upon what type of pipeline materials and rupture mitigation methods are employed by the pipeline designer. It is our understanding that the pipeline designer is the Southern California Gas Company (SCGC) and they have performed some preliminary analysis which indicates the rupture hazard may be mitigated by modifying the pipe wall dimension by increasing the pipe wall thickness to _ inch for a distance of 1000 feet straddling the anticipated point of fault rupture. We also understand that this finding is preliminary since we are in the early stages of engineering for this project. In addition, SCGC indicated that according to regulations by the CPUC and DOT pipelines must be designed to withstand potential fault rupture hazards.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
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MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area **Land Use**

REQUEST:

53. Please provide additional information regard the status of the 38-acre expansion area and the application for annexation.

RESPONSE:

The entire site, including the 38+ acres to be acquired by MVPC from SCE, the existing site, and land retained by SCE will be annexed by the City of Redlands. Once the Purchase and Sale Agreement and property lines have been finalized between MVPC and SCE, the City of Redlands and MVPC have agreed to present the Development Agreement to the city council for a second reading and adoption. The Ordinance Text Amendment allowing for electric generating stations, necessary building heights for structures and stacks, and noise control was adopted by the Redlands City Council on May 2, 2000. Once the Development Agreement is approved by the Redlands City Council, MVPC will drop its objection to the LAFCO annexation proceeding, allowing the annexation by the City of Redlands to be completed.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area **Land Use**

REQUEST:

54. Please provide a revised AFC Figure 6.3-3c showing the current status of the project site (i.e., within the unincorporated area of San Bernardino County).

RESPONSE:

Attached is revised Figure 6.3-3c showing the proposed project site currently within San Bernardino County.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Land Use**

REQUEST:

55. Please provide additional written documentation of the project s compliance with Section 84.0401 of the Alternate Procedure of the Development code of the County of San Bernardino.

RESPONSE:

Section 84.0401, entitled Additional Use Criteria, precedes Section 84.0405, which provided a means wherein San Bernardino County can utilize the land use decision of a state agency. Pursuant to the Alternate Procedure of the Development Code of the County of San Bernardino, section 84.0405, applicant has met the criteria set forth. The criteria states:

> Unless preempted by State or Federal Law, the specific land uses listed in Section 84.0410 shall be permitted in any official land use district without a Conditional Use Permit when, in the opinion of the Planning Officer, the criteria cited in Section 84.0401 and all the following alternate review procedures have been completed.

Section 84.0410 includes electrical generating stations as an official land use.

The Alternate Procedure of the Development Code of the County of San Bernardino, Section 84.0405(a)(3) requires a review process used by an approving agency to substantially address the same issues and concerns that would be addressed in the applicable County review and approval process.

Section 84.0405 specifically delineates the requirements that an alternative procedure must contain:

(1) The land use has been approved at public hearing by a State or Federally appointed body or commission empowered to approve or license the land use.

(2) Notice has been given to provide an opportunity for those interested or affected by the proposed use to take part in local public hearings conducted by the State or Federal body or commission approving the land use.

(3) (3) The review process used by the approving agency has

substantially addressed the same issues and concerns that would be addressed in applicable county review and approval process

(4) The approving State or Federal body or commission has made a reasonable effort to respond to concerns expressed by the County of San Bernardino and its citizens.

(5) The approval of the land use would not have a substantially detrimental effect on the public health, safety and welfare.

(6) Approval of the land use has a complied with applicable provisions of the California Environmental Quality Act.

(7) The land use is consistent with the County General Plan.

The CEC AFC process contain all 7 elements or ensures that their requirements are met. Thus, the land use decision made by the CEC for MVPP would be acceptable by San Bernardino County. The San Bernardino County Planning commission is the central contact point for land use and General Plan compliance issues.

Contact for San Bernardino Planning Commission is:

Mr. Jim Squire
San Bernardino Planning Commission
385 N. Arrowhead Avenue, First Floor
San Bernardino, California 92415-0182
(909) 387-4280

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area **Land Use**

REQUEST:

56. Please identify the City of Redlands development requirements that the project would be required to meet if the project was not under the jurisdiction of the Energy Commission s permitting authority.

RESPONSE:

If the proposed project was annexed by the City of Redlands, the city would require that it comply with the City of Redlands Municipal Code Title 18 (revised October 1998) M-2 General Industrial District. Specific elements as part of the M-2 requirements which the project will confirm to are: uses generally; permitted uses; similar uses permitted by Commission determination; conditional uses; property development standards; performance standards generally; fire and explosion hazards; radio interference or electrical disturbances; noise control; vibration; smoke emission; dust, heat and glare restrictions; and odor and gas emission restrictions.

Mountainview Power Company has a Development Agreement with the City of Redlands which included an ordinance text amendment to specifically allow non-nuclear electric generating stations and established stack heights and noise standards.

The City of Redlands Community Development Department regulates land uses, applies development standards for new and existing projects, implements the building code, and enforces zoning and other Municipal Ordinances within the City of Redlands. The most visible functions of the department are the processing of development projects through the Environmental Review Committee, Historic and Preservation Commission, Planning Commission, and the City Council. The City Planner, during the development process, reviews criteria for industrial projects including landscaping, building elevations, compatibility of design, etc. Although the applicant s property is currently in process of annexation to the City of Redlands, the applicant intends to fully comply with all requirements set forth in the City s General Plan.

As part of the applicant s efforts to annex the 82-acre property, the City of Redlands has pre-zoned the property as M-2 and has entered into the Pre Annexation Agreement between the City of Redlands and MVPC as shown in Attachment LAN-56B. Due to inconsistency with specific standards under the existing City of Redlands M-2 zoning requirements, the City of Redlands Planning Commission recommended approved Ordinance Text Amendments and a Development Agreement between the City of Redlands and the applicant

on March 14, 2000. The Development Agreement is attached as Attachment LAN-56A, and the zoning text amendment is attached as Attachment LAN-56C. The City Council approved the zoning text amendment at its regularly scheduled May 2, 2000 meeting.

Under the M-2 zoning rules, the applicant s project is a permitted use, and no special permits are required. In the absence of CEC jurisdiction and the Development Agreement, however, the applicant would be required to apply for a Development Plan Approval. The Development Agreement between the applicant and the City of Redlands provides the applicant with a vested right to develop the site to the extent allowed in M-2 industrial zones. The zoning text amendment allows a height of 120 feet for cooling towers and 225 feet for exhaust stacks. The applicant is required and intends to fully comply with applicable provisions of the General Plan and Municipal Code.

Pursuant to the required processes, the applicant plans to develop a development plan and submit such plan to the City Planner. Moreover, a project planner assigned to the project will review the plan. It is the applicant s understanding that the contact person responsible for the instant project is Jeff Shaw, Community Development Director for the City of Redlands Community Development Department.

Finally, the applicant will comply with all requirements set forth in the City of Redlands General Plan. By recognizing and addressing concerns and developing a plan consistent with the guidelines set forth in the General plan, the applicant will acquiesce to those provisions that ensure compliance with historic and scenic conservation, preservation of vegetation, and existing historic and architectural views.

ATTACHMENT

LAN-56A

ATTACHMENT

LAN-56B

ATTACHMENT

LAN-56C

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Noise**

REQUEST:

57. Section 6.4.3.1.1 (page 6.4-15) — The second paragraph describes how a local berm and building structure would reduce the construction noise at the nearest residential property to below 60 dBA. Please describe the dimensions of the berm and how the barriers (berm and other structures) would reduce the noise to a level below 60 dBA (provide us with a reference or the calculations used to come up with 60 dBA).

RESPONSE:

Several of the existing plant s structures (i.e. Powerhouse Building, tankage, and tank containment berming) will provide barrier and/or shielding attenuation from the proposed construction activity noise with respect to some of the residential areas adjacent to the plant site (especially to the south and south-southwest). This barrier/shielding attenuation will vary, depending on the individual receptor location and on the type, location, and intensity of the particular construction activity at any given time. The Powerhouse Building and water tanks are several stories high and will provide a maximal noise barrier benefit. The tank containment berming is generally three to four feet above grade on the equipment side of the tanks and approximately six feet above grade on the community side of the tanks. This six foot height can be expected to break the line-of-sight between most of the construction equipment and several of the nearest receptors. Thus, the benefit will be at least 5 dB. For conservatism, this minimum shielding of —5 dB was used for certain adjacent receptor locations; most notably Receptors #2 and #3.

The table entitled Construction Noise Propagation Analysis for Mountain View Power Project shows the results of a construction equipment noise analysis; using summed noise levels at 50 feet from the center of activity for each construction phase. See the response for Data Request 58 for more information on how these summations were arrived at. The top of the table is for the power island (plant site) construction. It shows that, with the minimal shielding benefits discussed above, the closest receptors will experience noise levels below 60 dBA. The table also shows that for unshielded locations greater than 2,000 feet from the plant construction activities, the construction noise emissions will be at or less than 60 dBA. This distance will ensure that the vast majority of residential areas along Wallace Court, San Bernardino Avenue, and Cooley Avenue will

experience well under 60 dBA from construction equipment sources. This result is also conservative, since no long-range benefits from ground absorption were assumed and since no account was made for shielding from several intermediate residential structures.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area **Noise**

REQUEST:

58. Section 6.4.3.1.1 (page 6.4-16) — Table 6.4-10 provides specific noise levels for different types of individual pieces of construction equipment. Please provide the cumulative noise levels for a typical power plant construction scenario assuming that a number of pieces of construction equipment would be operating at the same time?

RESPONSE:

The five-page table entitled Power Island Construction Noise Summation shows the details of a typical set of construction equipment, divided by activity phase, which would be expected for a typical power plant construction effort such as is planned for the MVPP site. The values for equipment quantity came from information from the engineering contractor; the values for noise levels and usage factors are from industry-accepted US EPA documents; and the basic methodology derives from widely-cited work done by the Construction Engineering Research Laboratory (CERL). In addition to the tabled values, a basic assumption was made that at any given time, one-half of the indicated monthly on-site equipment would be operating during any phase of the construction.

MOUNTAINVIEW POWER PLANT PROJECT
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Technical Area **Noise**

REQUEST:

59. Section 6.4.3.1.2 (page 6.4-16) — Describe the construction spread assumptions (pieces of equipment, construction type, etc) used to determine the typical pipeline construction noise levels listed in Table 6.4-11. The projected noise levels appear low for pipeline construction.

RESPONSE:

The table entitled Construction Noise Propagation Analysis for Mountain View Power Project also shows the results of a construction equipment noise analysis; using summed noise levels at 50 feet from the center of activity for the pipeline construction effort. As for the on-site construction, information for typical pipeline construction activities as well as industry-standard equipment noise level data and usage factors (EPA and CERL) were used to calculate the summed noise emissions from the pipeline construction activities, by phase. This information is shown in the three-page table entitled Pipeline Construction Noise Summation and is seen as being typical for this kind of pipeline activity, based on previous experience with similar projects. As with the on-site activities, the basic assumption was made that at any given time, one-half of the indicated monthly on-site equipment would be operating during any phase of the construction.

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

Technical Area	**Noise**

REQUEST:

60. Typically, the loudest noise encountered during construction of a power plant is the steam blow to clear pipes. Please describe the type of mitigation that would be applied to reduce the noise levels during a steam blow?

RESPONSE:

Following are two (2) answers to the Data Request 60, steam blow/steam line cleaning noise mitigation measures. The first answer addresses only the basic question asked. The second answer is a more detailed one which address alternate methods to steam blow which could be used to mitigate the noise associated with steam line cleaning.

First Answer

One of the present steam line cleaning methods being considered is a "silent" steam blow which is a reduced steam conditions, continuous blow method which uses a water-quenched exhaust silencer to reduce the exiting steam noise. The gas turbine generators and heat recovery steam generators will be operated to produce the required steam and they are equipped with their own inlet and exhaust silencers.

Second Answer

Presently, three (3) methods of steam line cleaning (steam blows, air blows, and hydro-blast cleaning) are being considered. A steam line cleaning method has not been selected for the Mountainview Power Plant. Therefore, all three methods are outlined below.

All of the active steam line cleaning methods (steam & air blows) will use exhaust silencers to reduce discharge noise levels during the cleaning periods.

1. Steam Blow Cleaning - If steam blows are used, the gas turbine generators and heat recovery steam generators would be operated to generate the steam required to perform the cleaning. They are equipped with their own inlet and

exhaust silencers. One of the present cleaning methods is a "silent" steam blow which is a reduced steam conditions, continuous blow method which uses a
water-quenched exhaust silencer to reduce the exiting steam noise. The steam blowing would continue until the steam lines are clean.

2. Air Blow Cleaning - If air blows are used, the gas turbines generators and heat recovery steam generators would not be operating. The compressed air required for the air blow cleaning method would be provided by a group of diesel-engine driven air compressors which are normally in sound attenuated enclosures. Normally, the air blows consist of short, periodic blows and are conducted on a continuous basis until the steam lines are clean.

3. Hydro-Blast Cleaning - For this cleaning method, the gas turbines generators and heat recovery steam generators would not be operating. This method uses high pressure water to clean the steam lines. A small, electric-motor driven pump is used to generate the flow and pressure required. No discharge of steam or air (no noise generation) would occur during the cleaning periods.

Steam or compressed air blow-down of pipes during construction and commissioning is normally controlled via the use of temporary or rented silencers that are especially made for this type of intermittent and variable service. These special silencers typically provide approximately 20 dB (or more) of attenuation to the noise levels that would be expected from the unmitigated piping systems. In addition to these silencers, blow-down noise mitigation can include the administrative control (whenever possible) of limiting these kinds of events during late evening or nighttime hours.

The combination of the physical mitigation measure of using silencers and the administrative control of time-of-day restrictions will minimize the noise impacts to surrounding community receptors from construction and commissioning blow-down events.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Socioeconomics and Environmental Justice**

REQUEST:

61. Provide a table showing the number of people by race and Hispanic origin for each census tract, based on the 1990 Census, within six miles of the proposed project site.

RESPONSE:

The 1990 Census Tracts within six miles of the project site are included in Figure 61-1. Table 61-1 includes the number of people by race and Hispanic origin for each census tract. If any portion of the census tract is within the six-mile radius, the entire census tract was included in the table.

Figure 61.1 1990 Census Tracts

Table 61-1
Mountain View Power Plant
Number of People by Race and Hispanic Origin
Six-Mile Radius
San Bernardino and Riverside Counties

Census Tract	Total Persons	Race					Hispanic Origin							Total Hispanic Origin
		White	Black	American Indian/ Eskimo/ Aleutian	Asian/ Pacific Islander	Other	Mexican	Puerto Rican	Cuban	Dominican	Central American	South American	Other	
36.01	14345	8903	2255	113	580	2494	3502	155	38	0	264	127	294	4380
40	10265	7217	418	157	153	2320	4140	54	25	0	266	13	189	4468
42	10938	1959	5902	94	457	2526	3621	31	7	0	219	0	46	3924
43	7892	2393	2726	48	175	2550	4116	9	9	0	545	13	21	4353
44	9895	6801	1292	69	488	1245	3084	69	0	0	230	33	50	3466
45.02	14532	11571	1115	273	556	1017	1872	34	22	0	60	0	179	2167
46.02	8626	6851	661	95	230	789	1798	48	0	54	44	30	95	2069
47	5214	1880	820	72	68	2374	3599	6	27	0	114	11	136	3893
48	3216	1301	189	0	5	1721	2886	11	0	0	57	0	21	2975
49	6596	4495	401	58	134	1508	4545	28	36	0	74	0	173	4856
50	1754	864	85	0	5	800	1248	29	0	0	58	0	104	1439
51	6582	5743	193	58	176	412	655	24	0	0	29	0	168	876
52	3186	2752	136	23	46	229	435	15	0	0	11	0	0	461
53	4161	3321	192	18	99	531	845	11	29	0	12	0	49	953
54	4920	2974	659	12	146	1129	1383	9	23	0	15	12	60	1502
55	7401	3626	1260	105	176	2234	3401	37	25	0	114	7	161	3745
56	7174	3046	767	152	234	2975	3902	63	0	0	125	0	97	4187
57	1740	1035	239	31	48	387	591	12	0	0	10	0	62	675
58	4022	1510	1006	141	78	1287	1911	59	0	0	111	0	62	2143
59	1254	665	84	0	17	488	826	0	0	0	42	0	25	893
60	660	261	256	7	0	136	166	0	0	0	12	0	0	178
61	7734	6594	344	44	257	495	987	20	23	0	41	98	45	1214
62	10308	7391	1470	101	361	985	1489	37	183	0	92	6	91	1898
63	11031	7806	927	130	474	1694	2402	94	0	10	0	64	154	2724
64	6628	4709	815	38	439	627	1936	30	0	0	16	0	85	2067
65	6612	3506	1306	155	554	1091	2187	57	0	0	116	0	90	2450
66	10937	5813	428	0	161	4535	6708	0	0	0	45	38	352	7143
67	3743	2091	52	45	57	1498	2518	5	0	3	190	0	44	2760
68	693	379	43	31	0	240	396	0	0	0	0	0	43	439
69	2972	1276	191	6	62	1437	2507	0	0	0	46	0	20	2573
70	5936	3513	260	86	116	1961	3636	18	6	0	213	0	92	3965
71.01	5644	4239	786	49	157	413	723	124	30	0	7	60	54	998
71.02	8275	5861	820	76	648	870	1053	78	0	25	38	36	162	1392
71.03	9899	7523	450	60	843	1023	1569	112	0	8	68	35	151	1943
72	5918	3118	832	130	850	988	1698	78	35	0	49	34	133	2027
73	19613	12338	1287	164	4145	1679	1982	241	8	11	89	213	130	2674
74.03	6898	5761	518	63	312	244	569	9	0	0	0	0	32	610
74.04	4576	3837	257	30	296	156	334	0	0	0	9	9	37	389
74.05	6413	3662	1863	124	258	506	1131	0	0	0	100	50	58	1339
74.06	9766	7344	851	123	453	995	1727	83	10	0	12	14	162	2008
75	932	501	309	10	34	78	154	7	7	0	8	0	0	176
76.01	6102	3972	1050	77	207	796	1397	31	0	0	71	0	18	1517

Mountain View Power Plant
Number of People by Race and Hispanic Origin
Six-Mile Radius
San Bernardino and Riverside Counties

Census	Total Persons	Race					Hispanic Origin							Total Hisp. pic
76.02	7154	5218	935	75	327	599	1565	56	0	0	9	0	115	1745
77	627	482	78	18	14	35	582	27	0	0	0	10	8	45
78	3822	2743	448	5	252	374	264	42	0	0	0	31	142	479
79	7401	6047	348	35	467	504	893	150	29	0	24	24	91	1211
80.01	5423	3411	288	4	411	1309	1933	43	0	0	7	0	107	2090
80.02	7240	3409	706	111	257	2757	3964	0	13	0	7	0	44	4028
81	3338	2723	115	67	148	285	493	7	8	0	12	0	8	528
82	5020	4605	87	32	37	259	310	12	0	0	0	0	28	350
83.01	6688	5742	197	57	406	286	517	9	0	0	27	0	90	643
83.02	3240	2896	0	12	164	168	271	0	0	0	7	10	31	319
84.01	6376	5043	224	76	296	737	980	49	11	0	13	0	101	1154
84.02	6381	5581	138	25	315	322	579	10	0	0	0	11	76	676
84.03	5530	5030	208	5	168	119	274	23	11	0	28	18	70	424
84.04	3409	2886	66	0	121	336	507	0	0	0	11	9	20	547
85	7547	7028	109	17	309	84	267	0	0	0	7	80	25	379
87.01	12967	12155	163	96	164	389	857	67	0	0	21	0	81	1026
422.04[3]	12707	9634	1025	136	904	1008	1672	45	73	0	164	82	164	2200
423[3]	5578	3879	439	46	164	1050	1729	11	48	0	103	0	124	2015
424[3]	36172	26472	4423	234	2259	2784	4751	330	110	10	129	161	649	6140
438.05[3]	3137	2807	74	17	117	122	457	0	0	0	0	31	36	524

3-Riverside County

Source: United States Census Bureau

MOUNTAINVIEW POWER PLANT PROJECT DATA REQUEST (00-AFC-2)	
Technical Area	**Socioeconomics and Environmental Justice**

REQUEST:

62. Describe, with reference to a field survey of the area within six miles of the proposed power plant, observations made of the existence of any pockets of residents that are distinctively low income or minority status. Describe their location and approximate boundaries.

RESPONSE:

Field Survey of Low-Income and Minority Residential Areas

Approach

A field survey was conducted on July 5, 2000 to determine the locations of low-income or minority residential areas within a six-mile radius of the Mountain View Power Plant (Figure 62-1). The Cities included in the survey area were: Colton, Grand Terrace, Highland, Loma Linda, Redlands, and San Bernardino. Additionally, unincorporated portions of San Bernardino and Riverside Counties were included in the survey.

In preparation of the field survey, the1990 United States Census (census) Data for the survey area was reviewed. Once the six-mile radius was identified, a grid pattern was established to effectively cover the area. The grid pattern followed the larger streets with each grid varying in size from _ to 1 _ -miles in all directions depending on the orientation of the streets and highways. Using the established grid pattern, approximately 100 miles within the six-mile radius, traversing neighborhoods via major thoroughfares was driven. As warranted, smaller streets were surveyed to clarify the existence of low-income and minority areas. Low-income residential areas were determined through the review of 1990 census data for each census tract and identification of residential areas with a high percentage of structures in disrepair. In addition, discussions were held with local real estate agents to exclude known areas of high property value. Areas of high minority populations were determined through field observation that occurred while driving through the area, and interpretation of census data from the census tracts nearest to the areas presented below (Figure 62-1).

The survey was a qualitative analysis and did not reflect every street and/or residence within a certain boundary. Streets and/or residential areas of higher income level may have occurred within the boundaries presented in this data response.

MOUNTAINVIEW POWER PLANT PROJECT
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Observations/Boundaries

The following presents observations made during the field survey dated July 5, 2000. The observations are separated into low-income and minority status areas, respectively.

Low-Income Areas

In order to compare the economic status of the areas presented in this report with field survey observations, the median household income data from the 1990 census was reviewed for each census tract located in the general area observed as low-income. According to Maggie Pacheco at the San Bernardino Economic Development Agency, a household is considered low income if its income is less than 80% of the average for that area. The median household income for the County of San Bernardino in 1989 was $33,443/year, resulting in a low-income status at approximately $26,754/year.

The following presents observed boundaries of low-income residential areas listed by their respective cities. Areas located within unincorporated San Bernardino County are included in their nearest adjacent city. Please note that these boundaries are neighborhood boundaries and at times extend into neighboring cities.

Colton

The following boundaries are presented from north to south:

- South of West C Street between North Hermosa Avenue and North La Cadena. Southern boundary-I 10 Freeway.
- South of West K Street between South Rancho Avenue and South 12th Street. Southern Boundary- O Street (East and West).

Census data for the general area within these boundaries indicates a household income level below the criteria.

Grand Terrace

According to field observations and census data for the portion of Grand Terrace that lies within the six-mile radius, there are no pockets of low-income residential areas.

Highland

The following boundaries are presented from north to south:

- Intersection of East Highland and Victoria (one block in all directions).
- South of I 30 Freeway between Los Feliz Drive and Olive Street.

Southern Boundary- East Pacific Street.

- South of East Pacific Street between Tippecanoe Street and Palm Avenue. Southern Boundary- East 3rd Street.
- Calhoun Street, east of the intersection of Boulder and Eucalyptus.
- Intermittent housing located on 5th Street between Del Rosa Drive and Church Street.

Census data for the general area within these boundaries indicates a household income level below the criteria.

Loma Linda

No distinctively low-income residential areas were observed in the City of Loma Linda. There were several apartment, condominium, and townhouse developments throughout the area.
Census data for the general area indicates a median household income level near the County of San Bernardino average.

Redlands

The following boundaries are presented from north to south:

- South of Pennsylvania Avenue between Texas Street and Berkeley Drive. Southern Boundary- West Colton Avenue.
- Intermittent housing located on West Colton Avenue between Jersey Street and Tennessee Street.

Census data for the general area within these boundaries indicates a household income level below the criteria.

San Bernardino

The following boundaries are presented from north to south:

- South of East 40th Street between Mountain Avenue and Conejo Drive. Southern Boundary- Marshall Boulevard.
- South of 36th Street between North E Street and North Lincoln Drive. Southern Boundary- I-30 Freeway.
- South of Marshall Boulevard between East 30th Street and Merito Avenue. Southern Boundary- I-30 Freeway.
- South of East Lynwood Drive between Sterling Avenue and Rockford Avenue. Southern Boundary- I-30 Freeway.
- South of I-30 Freeway between North E Street and Waterman Avenue. Southern Boundary- I-10 Freeway.
- South of East Highland Avenue between Dallas Avenue and Del

Rosa Avenue. Southern Boundary- Mill Street (East and West). Within this area, intermittent streets were observed to include residential areas above the low-income status.
Census data for the general area within these boundaries indicates a household income level below the criteria.

Unincorporated Riverside County

No low-income or minority residential areas were observed within the Riverside County section of the six-mile radius.

Minority Status Areas

According to field observations, minority neighborhoods were observed in Colton, Highland, Grand Terrace, Loma Linda, Redlands, and San Bernardino. These observations are consistent with corresponding 1990 census data. During the field survey, no other residential areas (equal to or greater than 2 blocks) were determined to be of distinctive minority status.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Socioeconomics and Environmental Justice**

REQUEST:

63. Detail any knowledge of community concern about the proposed project as expressed in public meetings or the local media. If there is no knowledge of local community concern, provide a statement to that effect.

RESPONSE:

Mountainview Power Company has made significant efforts to notify residents and businesses in the immediate area west of the proposed project. Those efforts include hand delivery of a flyer in both English and Spanish regarding the first Public Hearing and Workshop held in San Bernardino on June 13. Several local residents attended that meeting and, although none spoke publicly, in conversations at the site visit they were supportive of the project. We also established telephone information lines in English and Spanish and set up a web page regarding the project. Those telephone numbers and the web site address were included in the flyer that we delivered. Our public relations firm has been in contact with the local school, Victoria Elementary, and the principal has agreed to host a meeting at the school on July 26th for any interested parents or families to discuss the project.

To the best of our knowledge there have been no concerns regarding the plant expansion expressed to us, the media, public officials or anyone else in the local communities or neighboring residential and business areas. Only one call has been received on our information telephone lines and that was a question from a resident about possible interference with cellular telephones. There have been numerous hits to our web site but no e-mails. There was a lengthy article in the San Bernardino County Sun on June 14, 2000 regarding the project and the first hearing. The article was not negative in any way nor did it raise any concerns or issues.

Victoria Elementary School is located in the residential area to the west of the plant and boasts of its cultural diversity. It is a year-round school and there are about 20 different languages spoken at the school, with the predominant non-English languages being Asian languages and Spanish. The observation of those handing out flyers was that, although there are many languages spoken in this area, most if not all of the residents also speak English.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

64. Please provide a draft erosion control and stormwater management plan that identifies all measures that will be implemented during construction and operation of the proposed power plant. The draft erosion control plan shall identify all permanent and temporary measures in written form and depicted on a construction drawing(s) of appropriate scale. The plan should include information on the erosion control and stormwater management practices at the existing power plant (the former San Bernardino Generating Station) and specify the changes necessary to existing practices to accommodate the new facility. The purpose of the draft plan is to minimize the area disturbed, to protect disturbed areas, to retain sediment on-site and to minimize off-site effects of stormwater runoff. The elements of the plan shall include any revegetation efforts and best management measures to control stormwater runoff during construction and operation. In addition, any measures necessary to address Nationwide Permits or Streambed Alteration Agreements, as required, should be identified. Revegetation efforts should address both erosion control and habitat restoration. The plan should specify the type of seed and fertilizer, seeding and fertilizer rate, application method, the type and size of any container plants to be used and the criteria for judging revegetation success. The plan should also identify maintenance and monitoring efforts for all erosion, stormwater runoff control and revegetation measures including measures to rectify unsuccessful revegetation efforts.

RESPONSE:

See attachment: Storm Water Pollution Prevention Plan.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

65. Please show the calculations used to derive the water usage rates discussed in section 2.13.1 Water Requirements and shown in Tables 2.13-1 and 2.13-2 and Figures 6.14-7A and 6.14-8A (considering the discussion provided on the existing facility requirements on p. 6.14-15d).

RESPONSE:

Attachment WAT-65A provides the calculations requested.

ATTACHMENT

WAT-65A

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

66. Identify the likely number of days per year the MVPC will operate as base, peak (summer maximum conditions), and cyclic loads as well as be off-line for maintenance. Provide data that clearly shows what percent load each unit is expected to operate and specify the number of days each year this load profile is likely to occur.

RESPONSE:

Table WAT-66a shows an expected operation schedule for the plant. Capacity factors and operating hours are shown by month. During the hours scheduled for operation, we expect the plant to operate at full load for each unit. We do not anticipate that this plant will operate as a peaking plant or cycling facility, but will be dispatched based on its excellent heat rate and the demand for electricity.

Table WAT-66a

Proforma (model run on year 2004)
Model

Month	Number Starts	Capacit Factor	Hours per Month	Hours on l:	Schedul
January	4	95.97%	744	714	7x24
February	2	100.00%	696	696	7x24
March	1	100.00%	744	744	7x24
April	16	57.78%	720	416	6X16
May (outag	16	43.01%	744	320	6X16
days)					
June	1	100.00%	720	720	7x24
July	1	95.70%	744	712	7x24
August	1	100.00%	744	744	7x24
September	2	99.17%	720	714	7x24
October	1	100.00%	744	744	7x24
November	1	95.56%	720	688	7x24
December	1	95.97%	744	714	7x24
Total	47	90.26%	8,784	7,926	0

Definition Schedule: 7X24 Operation at full load for 24 hours per day 7 days a week
Schedule 6X16 Operation at full load for 16 hours per day for 6 days a week. The units will be offline when not at full load.
Note 1: The present plan does not have the units operating at reduced load.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area **Soil and Water Resources**

REQUEST:

67. Please provide copies of the bi-annual groundwater production reports for the last 3 cycles (total of 6 years) submitted to the San Bernardino Valley Water Conservation District for wells 1S3W18N02S and 1S3W18N03S.

RESPONSE:

Data are being provided to the CEC staff showing annual pumping for the two on-site production wells, 1S3W18N02S and 1S3W18N03S. Data is provided for the 12-month period, July 1 through June 30 (consistent with the data previously provided for other production wells in the Supplement to Volume 3 of the AFC), for the six years from July 1994 through June 2000. Data for the 1995-1999 period comes from the San Bernardino Valley Water Conservation District (SBVWCD) Bi-annual Groundwater Production Reports; data for the 1994-1995 period (only January through June 1995 is available) is from Southern California Edison pumping records, and data for the 1999-2000 period is from Mountainview Power Company pumping records. Copies of available San Bernardino Valley Water Conservation District (SBVWCD) Bi-annual Groundwater Production Reports are being provided to CEC staff as well. The annual pumping in acre-feet from these two wells is summarized as follows (note that these figures are for the two on-site wells only and do not reflect water provided to MVPC from the Gage Canal Company wells):

	MVPC #1	MVPC #2	
1994-1995	0.2	5.1	January to June 1995 data only
1995-1996	20.4	162.6	
1996-1997	12.3	347.5	
1997-1998	36.7	330.2	
1998-1999	0.1	18.0	
1999-2000	-	110.6	Pumping from Well No. 2 only.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

68. Provide a detailed discussion of installed capital costs, direct and indirect annual operating costs, the effects on plant performance, to include power output, fuel consumption, and emissions, along with the principal design specifications for both dry cooling and wet-dry hybrid systems incorporated into the Mountainview Power Plant in place of both the proposed 4-cell and 10-cell mechanical draft cooling towers. Please identify the source of all reported information referenced. Include the following:
    a. Provide an analysis for the cost and water use associated with the proposed Mountainview Power Plant. The analysis should include a table that compares wet, wet/dry, and dry cooling technologies, along with the estimated capital direct and indirect annual operating costs, and the anticipated water demand.
    b. Provide the assumptions and calculations that determine the capital costs, discussions of whether labor and financing costs are included in the estimates, and the performance levels for the technologies specified.
    c. Provide energy balances for the combined cycles at 50 percent, 75 percent, 100 percent and peak loads, at both average winter and average summer temperatures. Include any effects of inlet cooling and power augmentation.
    d. Provide the quantities of water used and wastewater discharged, and estimates of water, treatment, clean-up, and any other chemicals required for the various configurations.
    e. For each of the cooling technologies discussed above, provide the direct annual operating costs, including the calculations and basis for each of the following cost elements: labor, maintenance, energy, spare and renewal parts, materials and waste.

For each of the cooling technologies discussed above, provide the indirect annual operating costs, including the calculations and basis for each of the following cost elements: overhead, administration, tax payments and credits, insurance and capital recovery.

RESPONSE:

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Twelve copies of Duke/Flour Daniel s Report of Analysis regarding the costs associated with dry cooking and hybrid wet-dry cooling systems are being concurrently submitted under separate cover.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area **Soil and Water Resources**

REQUEST:

69. Provide a discussion of the relative environmental advantages and disadvantages of wet, wet/dry, and dry cooling technologies. Include an evaluation of water demand, particulate matter emissions, visual resource implications, and land use requirements associated with the use of the three cooling options.

    f. Quantify air emissions from the project stacks and cooling towers, efficiency and capacity losses, and increased parasitic loads for the three cooling options under conditions of both constant and maximum fuel use.

    g. Quantify the footprints and dimensions of the cooling towers for the three cooling options.

    h. Quantify the occurrence and size of visible plumes and the noise levels for the three cooling options.

RESPONSE:

g. Table shows the differences in the net heat rate, taking into consideration efficiency, capacity, and parasitic loads between the base case wet cooling system and the dry cooling and wet/dry alternatives. The alternate cooling technologies increase the net plant heat rate (for full load operation) by about 180 Btu/kW-hr, meaning that about 3 % less usable electricity is produced in the alternate cases for the same fuel consumption and stack emissions. This reduction in output will have to be replaced by other, potentially older and higher emitting, generation facilities located elsewhere. Even if this lost capacity could be replaced by another state-of the-art plant with the same very high efficiency and very low emission rates, emissions would be increased at that plant, for example, by about 2 lb/hr NOx and 3 lb/hr CO.

As shown on Table the variation in total plant fuel consumption between the base case cooling technology of wet cooling and the two alternatives of dry cooling and combined wet/dry cooling is very slight. The largest difference in fuel consumption occurs for the full load, duct fired summer case (82 deg F ambient temperature). The total plant fuel consumption for both alternatives is about 18.7 million Btu/hr (LHV) less than for the wet cooling case, a decrease of about 0.3%. (Equivalent to about 20.6 million Btu/hr, HHV.) Based on the emission factors presented in AFC Tables 6.8-31 and —32, the total plant estimated decrease in stack emissions is summarized in the following table:

Alternative Cooling Technology Stack Emission Decrease

Pollutant	Emission factor, **lb/hr million Btu (HHV)**	**Emission decrease, lb/hr**
NOx (2.5 ppm)	0.0089	0.2
Sox	0.00071	0.01
CO (6 ppm)	0.013	0.3
VOC	0.0017	0.04
PM10	0.006	0.1

Clearly, these emission differences are negligible.

Cooling tower drift emissions of PM10 for the wet cooling base case are reported in AFC Table 6.8-35 as 5.8 lb/hr, maximum. These PM10 emissions would be eliminated in the case of air cooling. For the wet/dry case, the cooling tower size is about 50 % of the wet cooling base case, which would result in a reduction in PM10 drift emissions of about 2.9 lb/hr.

h. Approximate equipment dimensions for each case are also shown in Table 2. It should be noted that while the base case wet cooling towers structures are large, two towers at 54 ft x 384 ft x 41 ft high each, the air cooled condensers for the alternate cooling technology cases are significantly larger, and more than two times as high. Thus, the alternate cases would result in significantly greater visual impacts as compared to the wet cooling case.

MOUNTAINVIEW POWER PLANT PROJECT
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i. The frequency of occurrence and predicted size of visible cooling tower condensate plumes for the wet cooling case is described in AFC Section 6.6.3.4.3 and Data Response 121. The dry cooling alternative does not require a cooling tower and therefore no visible plumes would be generated. The cooling towers included in the wet/dry alternative are very similar to the towers utilized for the wet cooling base case, but about half the cooling capacity. As described in the AFC, the frequency of visible cooling tower plumes is greatest in the winter during periods of cooler ambient temperatures and higher humidity. These conditions also significantly improve the efficiency of an air cooled condenser, so that for the wet/dry case it may not be necessary to operate the cooling towers during certain combinations of ambient conditions and plant loads during the winter. However, when the wet/dry alternative cooling towers operate, the frequency of visible plume occurrence would be very similar to the frequency of occurrence in the full wet cooling case, since the tower exhaust vapors would be of about the same temperature and water content for either case. The visible plumes for the wet/dry case would also probably be about the same height as the full wet cooling case, but somewhat smaller in width due to the reduced number of cooling tower cells.

Preliminary noise estimates for near and far field are shown on Table 2 (Attachment WAT-69A). As can be seen from this table, the near field noise levels are the same for each case, but the far is greater for the cooling towers in the wet cooling and wet/dry cooling cases.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

70. Please provide an explanation of what is meant by upset periods and/or operating conditions that would be considered abnormal . Please provide a discussion of how frequently these conditions are expected to occur and what the total annual discharge quantities are likely to be to the SARI line.

RESPONSE:

The Santa Ana Regional Interceptor Line (SARI line) was constructed by the Santa Ana Watershed Project Authority (SAWPA) and was completed in 1995. SAWPA is a joint exercise of powers agency made up of Orange Country Water District, Eastern Municipal Water District, Inland Empire Utilities Agency, Western Municipal Water District of Riverside County and SBVMWD. Under the JPA agreement, each member is designated as the contracting agency for SARI line capacity and use within its respective boundary. The SARI line is a permitted brine line that follows the Santa Ana River drainage through San Bernardino, Riverside, and Orange Counties and terminates at the Orange County Sanitation District s Fountain Valley Wastewater Treatment Plant. Wastewater is treated at the facility and discharged to the Pacific Ocean via a permitted ocean outfall pipeline. The total length of the pipeline is over 73 miles and has a capacity of between 15 and 30 million gallons per day.

MVPC will purchase capacity for discharging up to 288,000 gpd (200 gpm) or a maximum of 105 million gallons per year. MVPC intends to cycle cooling tower water up to 20 times to make the maximum use of the water before discharging it into the SARI line. The AFC incorrectly states that wastewater discharge will only occur under abnormal operating conditions or during upset periods. The plant will discharge 200 gpm on a continuous basis when the plant is running at full capacity. The actual amount of water discharge for a year will correspond very closely to the actual plant capacity during the same time period. Based on an expected annual capacity factor of 65-90% we would expect the annual discharge into the SARI line to be in a range of 68 million to 94.5 million gallons per year. Capacity on the SARI line is purchased on a gallons per day basis.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

71. Please provide a copy of a complete application for the Direct Connection Permit that will be submitted to the Santa Ana Watershed Project Authority.

RESPONSE:

The complete direct connection permit application is being submitted under separate cover concurrently with these responses.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

72. Please provide verification that the applicant has obtained adequate capacity rights to discharge the specified waste amounts to the SARI line. If the applicant has not yet secured adequate capacity rights to the SARI line for the plant s wastewater discharge, please specify when the applicant anticipates such rights will be secured and what milestones or barriers must be overcome to obtain these rights, if any.

RESPONSE:

The SBVMWD Board formally accepted the MVPC request for capacity on May 23, 2000. They are in the process of preparing an agreement to provide both SARI line capacity and Fountain Valley treatment capacity to MVPC. The attached letter was provided to MVPC to indicate the intent of SBVMWD to complete a sale and purchase of such capacity by the end of August 2000. We are not aware of any milestones or barriers that must be overcome in order to obtain these rights to capacity.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

73. Identify the NPDES permit held by the Fountain Valley Wastewater Treatment Facility and any violations or exceedances of the permit conditions for the preceding period of 1 year. Provide all information required by the NPDES permit held by the treatment facility to accept the project s wastewater under the U.S. EPA pretreatment of industrial wastes established by the Clean Water Act (40 CFR 423) for this category of industrial discharge.

RESPONSE:

The NPDES permit held by FVWTF is attached. There have been no violations or exceedances for the preceeding year.

DUKE/FLUOR DANIEL

COMPARATIVE ANALYSIS OF WET, DRY AND WET-DRY HYBRID COOLING ALTERNATIVES

Prepared by Duke/Fluor Daniel

For

Mountainview Power Company LLC

July, 2000

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

74. Please explain what quality and treatment cost issues must be resolved prior to the use of effluent from the City of Redlands Wastewater Treatment Plant. Please identify both estimated capital and operating costs, all assumptions, examples and information sources associated with the use of reclaimed water at the proposed power plant.

RESPONSE:

The quality and treatment cost issues that needed to be resolved concerning the economical impact of additional water treatment costs and capital costs necessary to use reclaim water for cooling tower make-up. At the time the original AFC was developed, MVPC understood that the City of Redlands was willing to provide reclaim water from its treatment plant near the project site. It was still unclear what quality the water would have and what it would cost to treat the water sufficiently for use in the cooling system. MVPC has since engaged in several meetings and discussions with the City of Redlands and has come to understand that there are no quality or treatment cost issues. Indeed, it is apparent that the City of Redlands will be able to provide 50% of MVPP s cooling water needs and perhaps as much as 80%.

The attached map (Figure WAT-74a) depicts the City of Redlands Reclaimed/Non-potable Water Project. The project contains several elements. Of primary relevance to MVPP is the plan to provide reclaimed water pumped from beneath the percolation ponds located at the north end of Alabama Street. The City of Redlands will be providing this water to interested users along San Bernardino Avenue. These users will primarily be the local orange groves. The water will reach the street directly adjacent to MVPP via an existing 14 inch water supply line running from the intersection of California Street and San Bernardino Avenue.

Because the reclaim water will be percolated secondary effluent, the water will be clean enough to satisfy the quality requirements for cooling tower make-up without the project incurring unreasonable treatment costs. The City of Redlands has committed to supply the plant at a cost neutral basis secondary percolated effluent. Cost neutral is defined by the city as a cost equal to the cost to install and operate a well of the size to provide a equal amount of water.

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

The City of Redlands City council will consider endorsing a memorandum of understanding between the City and MVPC.

The contact for the City of Redlands is:
Douglas Headrick, P.E.
Chief of Water Resources
City of Redlands
Phone: (909) 798-7698

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

75. Please explain how the on-site treatment proposed by the applicant will, in fact, satisfy the California Department of Health Services proposed Title 22 requirements for the cooling tower make-up.

RESPONSE:

The recycled water used will be secondary effluent water from the Redlands Treatment Facility. Before sending the secondary effluent water to Mountainview Power Company, the Redlands Treatment Facility will provide tertiary treatment by discharging the effluent to existing percolation ponds, where it will be percolated and then extracted using shallow wells located to capture the majority of the discharged effluent. The extracted water will be pumped to the Mountainview Power Plant site where it will be discharged to the Cooling Water Supply Storage Tank. The secondary effluent water will be treated with Biocide and blended with water from the plant water supply wells in the Cooling Water Storage Tank before it is pumped to the Cooling Towers as make up. The Cooling Towers will be fitted with drift eliminators.

The specific Title 22 requirements are addressed as follows:

a) The recycled water used must be disinfected tertiary recycled water (DTRW) — water used for MVPCs cooling tower make-up will be percolated effluent which is a better tertiary treatment method than the DTRW system.
b) A drift eliminator shall be used when ever the cooling system is in operation - MVPC will use a drift eliminator.
c) A chlorine, or ether biocide, shall be used to treat the recirculating water to minimize the growth of Legionella and other micro-organisms - MVPC will use biocide to treat the recirculating water.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

76. Metals and trace elements are a concern when using reclaimed water, particularly when concentrated in cooling towers. Provide additional analytical data on the reclaimed water source for metals and trace elements using an analytical method with analytes and detection limits comparable to U.S. EPA Method 200.8, Inductively Coupled Plasma — Mass Spectrometry. Report all analytes and detection limits. Provide calculations of the estimated concentrations of all constituents of concern in all waste or process water streams, and in the total wastewater discharge to the Fountain Valley Wastewater Treatment Facility.

RESPONSE:

The proposed source of reclaimed water for the MVPC expansion will be provided by the City of Redlands Wastewater Treatment Plant. The reclaimed water from the City s plant will first be discharged to percolation ponds near the plant s facility where it will mix with the shallow groundwater beneath the ponds. The water will then be pumped through shallow (< 400 foot deep) extraction wells and provided to MVPC for use in the cooling towers. The analytical results of a water sample (attached) collected on June 28, 2000 from a shallow monitoring well owned by the City of Redlands and located downgradient of the existing percolation ponds give a good indication of the quality of the reclaimed water to be used in the cooling towers. The water sample was analyzed for dissolved metals using EPA Method 6010B which utilizes the ICP method to quantify the metal concentrations. The analysis for other inorganic constituents is also provided.

The concentrations of trace metals in the sample are similar to that found in shallow groundwater in the vicinity of MVPC. The concentrations, in general are higher than that found in the on-site production wells, but are well below the maximum contaminant levels (MCLs) for those constituents which have designated MCLs.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

77. The information provided in the AFC/Supplement identified the type of information needed in a report of waste discharge (ROWD) application, not the specific information required in a ROWD. The application requirements for a ROWD are detailed in COMBINED SWRCB/CIWMB REGUALTIONS DIVISION 2, TITLE 27 . Please provide all information required by the RWQCB listed in Division 2, Title 27, Article 4, SWRCB-Development of Waste Discharge Requirements (WDRs). Section D (21750. SWRCB-Waste Management Unit Characteristics and Attributes to be Described in the ROWD), and Section F (21760. SWRCB- Design Report and Operations Plan) clearly list and discuss the information required. Please reference by section any information contained in the AFC that addresses these information requirements.

RESPONSE:

California Code of Regulations, Title 22, Section 21710, indicates that a Report of Waste Discharge (ROWD) is required when any person who discharges or proposes to discharge solid waste to land where water quality could be affected as a result of such discharge A ROWD, then, pertains to solid waste discharge.

MVPC has searched the AFC and supplements but has been unable to find any reference to ROWD information. MVPC has no plans to discharge solid waste and, as such, does not anticipate the need for a ROWD. The Santa Anna Regional Water Quality Control Board also was unable to identify any requirements for a ROWD for the project.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

78. Please provide staff with copies of the following referenced reports as cited in the hydrogeologic study: CSM, 1997; Dutcher, L.C., and Garrett, A., 1963; Geraghty and Miller, 1997; Hardt and Hutchinson, 1980; HIS-Geotrans, 1997; HIS-Geotrans, 1998a, HIS-Geotrans, 1998b; HIS-Geotrans, 1999; SBVMWD, 1998; SBVMWD, 1999; Slade, R.C., 1986; Van Genuchten, M.Th., and W.J. Alves 1982.

RESPONSE:

Copies of the following reports cited in the hydrogeologic study are being submitted to the CEC:

(1) CSM, 1997. Screening-Level Tools for Modeling Fate and Transport of Trace Organic Chemicals in Soil and Groundwater , Colorado School of Mines, June 1997.

(2) Geraghty and Miller, 1997. San Bernardino Generation Station Phase II Environmental Site Assessment , June 1997.

(3) HSI-Geotrans, 1997. Redlands Groundwater Modeling Project — Perchlorate Modeling Technical Memorandum .

(4) HSI-Geotrans, 1998a. Redlands Groundwater Modeling Project — Groundwater Flow and TCE Modeling Documentation Report .

(5) HSI-Geotrans, 1998b. Phase 1 Investigation of the Leading Edge of the Redlands Groundwater Plume — Technical Memorandum , September 1998.

(6) HSI-Geotrans, 1999. December 1998 Data Report — Water Supply Contingency Plan (WSCP), February, 1999 .

(7) SBVMWD, 1998. High Groundwater Mitigation Project for the Bunker Hill Basin Area of Historic High Groundwater (DRAFT) , San Bernardino Valley Municipal Water District High Groundwater Mitigation Committee, August 7, 1998.

(8) SBVWCD, 1999. Engineering Investigation of the Bunker Hill Basin, 1998-99 , March 1999. Other Annual Engineering Reports have been requested from

SBVWCD and will be provide to staff as soon as received from the water conservation district.

(9) Slade, R.C., 1986. Hydrogeology Feasibility Study for Groundwater Development: Prepared for Department of Public Works, City of Redlands, California , February 1986.

The following three reports are not provided:

(1) Dutcher, L.C., and Garrett, A., 1963. Geologic and Hydrologic Features of the San Bernardino Area of California , USGS Water Supply Paper 1419, US Geological Survey. ***This report was referenced as a referenced document in the two Lockheed modeling reports (Documents (3) and (4) above) that are provided to the CEC staff; the document is out of print and not available at this time. As a supplement to this report by Dutcher and Garrett, a copy of the more recent USGS Open File Report, Hydrology, Description of Computer Models, and Evaluation of Selected Water Management Alternatives in the San Bernardino Area (1997) is being submitted to the CEC.***

(2) Hardt and Hutchinson, 1980. Development and Use of a Mathematical Model of the San Bernardino Valley Groundwater Basin, California , USGS Water Resources Investigation Report 80-576, US Geological Survey. ***This report was referenced as a referenced document in the two Lockheed modeling reports (Documents (3) and (4) above) provided to the CEC staff; the document is out of print and not available at this time. As a supplement to this report by Hardt and Hutchinson, a copy of the more recent USGS Open File Report, Hydrology, Description of Computer Models, and Evaluation of Selected Water Management Alternatives in the San Bernardino Area (1997) is being submitted to the CEC.***

(3) Van Genuchten, M.Th., and W.J. Alves, Analytical Solutions of the One-Dimensional Convective-Dispersive Solute Transport Equation , Technical Bulletin 161, U.S. Salinity Lab., Agricultural Res. Service, U.S. Department of Agriculture, Riverside, California (1982). ***This document describes the analytical solution and mathematical basis the model equations used in by the TRANS1D model. The document referenced in the modeling document, Screening-Level Tools for Modeling Fate and Transport of Trace Organic Chemicals in Soil and Groundwater has been provided to the CEC (see item (1) in list of provided documents above).***

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

79. Please provide staff with a copy of all available reports, descriptions and input and output files developed for the Lockheed model.

RESPONSE:

Copies of the following reports describing the development (conceptual model framework, model code selection, model construction, model parameter input, model calibration, model assumptions, and limitations) and implementation (model scenarios, model output and predictive results, and conclusions) of the Lockheed model are being provided to the CEC staff:

HSI-Geotrans, 1997. Redlands Groundwater Modeling Project — Perchlorate Modeling Technical Memorandum

HSI-Geotrans, 1998a. Redlands Groundwater Modeling Project — Groundwater Flow and TCE Modeling Documentation Report .

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

80. Please provide staff with a copy of the input and output files developed for the MVPC model, as well as description (text and/or figures) of the input for this analysis.

RESPONSE:

A copy of the following report giving a description (model equations, model assumptions and limitations, required model input) of the analytical model, TRANS1D, used to complete the additional MVPC modeling of perchlorate migration is being provided to the CEC staff:

CSM, 1997. Screening-Level Tools for Modeling Fate and Transport of Trace Organic Chemicals in Soil and Groundwater , Colorado School of Mines, June 1997.

In addition, a discussion of the input used in the MVPC model and the output produced by the model is provided in the response to Data Request #81.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

81. Please provide a listing of the common parameters used in the Lockheed and MVPC models, a discussion of how these parameters were developed and why they were selected.

RESPONSE:

The Lockheed model utilizes the groundwater flow model code, MODFLOW, and the solute transport model code, MT3D to simulate the migration over time of the Crafton-Redlands TCE and perchlorate plumes under the physical and chemical influences of advection, dispersion, and sorption, and the hydrologic influences brought about by variations in recharge and groundwater extraction. The Lockheed model is a sophisticated 3-dimensional numerical model that can be used to predict the migration of the plumes in response to pumping within the different modeled layers.

Rather, the MVPC model utilized a simple analytical model called TRANS1D to evaluate perchlorate migration in the lower water-bearing zone. The TRANS1D model cannot simulate the effect of pumping wells; rather, it models the effect of advection, dispersion, and sorption only. The common parameters used in both models and how they were developed and selected are summarized in the attached table.

The following solute transport model parameters were common to both the Lockheed perchlorate model and the TRANS1D model used in the additional MVPC modeling effort.

Parameter	Value	Basis for Selection
Effective Porosity	0.19	Based upon avg. porosity conditions from well log data
Retardation, Perchlorate	1.0	Assumes that perchlorate is a conservative tracer, and doe not adsorb to aquifer solids
Longitudinal Dispersivity	100 ft	Estimated based upon observed length of the Crafton-Redlands perchlorate plume
Chemical Reactions/Degradation	None	Assumes that perchlorate does not degrade readily in the subsurface environment

Other parameters used in the TRANS1D model that were not used in the Lockheed perchlorate model include hydraulic conductivity (was estimated base on transmissivity values in the Lockheed model), organic carbon (estimated based upon a low carbon content in the lower aquifer), initial perchlorate concentration in the lower aquifer (based upon the maximum perchlorate concentration observed in the Lockheed model, and hydraulic gradient in the lower aquifer (based upon worst case scenario in the lower aquifer).

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

82. Please provide values of hydraulic conductivity and storativity developed from the June 14, 1999 MVPC Well No. 1 aquifer test.

RESPONSE:

A constant rate pump test was conducted in MVPC Well No. 1 starting on June 14, 1999 and ending on June 20, 1999. For the first 4-1/2 days, pumping was maintained in Well No. 1 at approximately 1,400 gpm; during this time, drawdown was measured in both MVPC Well No. 1 and No. 2. Time-drawdown data from this initial period was used to estimate hydraulic parameters for the lower water-bearing zone. The calculated value for transmissivity, T, is 17,000 ft^2/day; this compares to transmissivity values from other aquifer tests in the Bunker Hill Basin of up to 25,700 ft^2/day; with most T values in the range of 8,000 to 12,000 ft^2/day. Based upon this estimated T value and a lower aquifer thickness of 200 feet based upon the well logs, the hydraulic conductivity is approximately 85 feet/day. Storativity of the confined lower aquifer was not calculated but is estimated to be fairly low, on the order of 0.0001.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

83. Although the MVPC modeling analysis evaluates the movement of contaminants toward the MVPC, the applicant does not evaluate the effect of increased pumping by the proposed well on the movement of the TCE and perchlorate plumes into the deep aquifer. Please provide staff with an analysis of the effect of project pumping on the migration of the contaminant plumes into the deep aquifer, both laterally and vertically. Please also include a copy of calculations, spreadsheets and/or modeling files for this analysis.

RESPONSE:

The modeling conducted by Lockheed Martin Corporation described in the report Redlands Groundwater Modeling Project — Groundwater Flow and TCE Modeling Documentation Report dated February 27, 1998 discusses two scenarios to evaluate the migration of the TCE over time, (1) a scenario that simulates the plume migration under current pumping conditions, and (2) a scenario that simulates the plume migration under a condition of increased pumping. This report is being provided to CEC staff (see response to data request #78). Although the increased pumping scenario does not specifically address the increased pumping from the MVPC production wells, the scenario does simulate increased pumping in the lower aquifer in the vicinity of MVPC. The results of the increased pumping scenario (see Table 9.17 of the report) show that none of the production wells that produce groundwater from the lower aquifer will be impacted by the TCE plume at or above the MCL of 5 ppb throughout the modeling period (1997 — 2035). Under the increased pumping scenario, TCE in production wells in the vicinity of MVPC in the lower zone such as COLL Mountainview #2 and Richardson #1 remains below 0.5 ppb during this time period. These results are a good indication that the increase in pumping from the MVPC project will not significantly effect the migration of the plume. It should be noted that in 1999, MVPC met with staff from Lockheed Martin and their consultants to discuss the proposed project. At that time, the estimates of the project pumping were given to Lockheed with a request that additional and more accurate model scenarios be run to take into account the MVPC pumping. Lockheed said they continue to refine their model and would incorporate these new estimates in later model runs.

The results of the Lockheed model scenario simulating the migration of the

perchlorate plume was discussed in the report Redlands Groundwater Modeling Project — Perchlorate Modeling Technical Memorandum . This report has also been provided to CEC staff. Modeling of an increased pumping scenario was not completed for the perchlorate plume modeling; that is the reason that the additional MVPC modeling was included in the hydrogeologic study. The Lockheed perchlorate modeling, under normal pumping conditions, shows that the perchlorate plume may reach the lower aquifer over time at concentrations slightly above the 18 ppb action level. However, at these concentrations, when the plume reaches the MVPC wells, the concentration would be well below the action level. Lockheed has been conducting additional modeling of the perchlorate plume as well, some of which consider increases in pumping. A model report was to be prepared for the RWQCB in January 2000, however the report is still being reviewed by Lockheed staff and has been submitted to RWQCB or for public review at this time.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

84. Please provide staff with a comparison of these predicted future production rates to the future production rates used in the future scenarios of the Lockheed model.

RESPONSE:

Estimates of future regional groundwater production in the Bunker Hill Groundwater Basin as described in Appendix K (Hydrogeologic Study) and the Supplement to Volume 3 of the AFC come primarily from two sources: (1) Data compiled and analyzed by the SBVWCD, and (2) Data used in the groundwater modeling studies produced by Lockheed Martin Corporation.

The SBVWCD data are annual forecasts of future year groundwater extraction based upon predictions for upcoming rainfall amounts and historic pumping information provided by agricultural users and municipal purveyors in the Bunker Hill Basin. The purpose of the annual forecasts is to assist SBVWCD in managing recharge operations by estimating changes in Bunker Hill Basin storage and therefore an estimate of the volume of State Water Project water required to replenish groundwater in the Basin. Since these estimates are tied closely to predictions in rainfall, they are not necessarily good indicators of increased pumping due to increases in municipal groundwater extraction brought about by population growth.

The estimate provided in the Lockheed modeling studies reflects and overall pumping increase of 7.5% (equivalent to 10,800 acre-feet/year) over the rates used in the existing pumping scenario and an additional 4,000 acre-feet/year in the north-central portion of the basin. The total simulated increase was therefore 14,800 acre-feet/year. This scenario was modeled over a 39-year modeling period from 1997 through 2035. The basis for the estimated future increase in pumping was not discussed in the modeling study.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

85. Please provide staff with an explanation of the criteria for the discontinuing use of the Victoria Farm wells, owing to contamination by the perchlorate and TCE plumes, how this criteria or other criteria is being used to determine discontinued use of other regional wells, and how elevated levels of TCE or perchlorate would effect the use of the project wells.

RESPONSE:

Victoria Farms Well s #1 and #3 were taken out of service in June 1997 when the Victoria Farms Mutual Water Company (VFMWC) was connected to the City of San Bernardino water supply. At that time, perchlorate had been detected in both wells; TCE had not been detected in Well #3 but had been detected at low concentrations in Well #1 that produces water from the shallow water-bearing zone. The criteria used to discontinue the use of the VFMWC wells is established in the Water Supply Contingency Plan (WSCP) prepared by Lockheed Martin Corporation and formally submitted to the Regional Water Quality Control Board in March 1997. The WSCP addresses the maintenance of water supply to purveyors in the event that production wells become impacted with TCE from the Crafton-Redlands TCE Plume.

A specific sampling criteria has been established in the WSCP to evaluate and determine when to discontinue the use of other production wells. This criteria is described in detail in the document, December 1998 Data Report — Water Supply Contingency Plan (WSCP), February, 1999 (HSI-Geotrans, 1999) provided to CEC staff as part of Data Response 78 above. The sampling criteria is summarized in Figures 3 and 4 of this document which show the decision matrix for the sampling of production wells for perchlorate and TCE, respectively.

MVPC Well #2 (through the auxiliary pump) is sampled periodically as part of the ongoing WSCP program. The samples are analyzed for TCE and perchlorate; to date, these constituents have not been detected in MVPC Well #2. MVPC Well #1 had previously been sampled as part of the WCSP program, however sampling of the well was discontinued in June 1997 due to sampling logistics. Although the MVPC production wells are in the WSCP program, elevated levels of TCE or perchlorate in the project wells would not result in these wells being taken out of service since water from the wells is used

primarily for cooling tower makeup water and not for potable use.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

86. Please provide staff with an analysis of the effect that project pumping would have on the rate of change in concentration of perchlorate in Gage Canal Well No. 56-1.

RESPONSE:

The project pumping would not have a significant effect on the rate of change in concentration of perchlorate in the Gage Canal Well No. 56-1. GCC Well No. 56-1 produces water from both the middle water-bearing zone (impacted by the perchlorate plume) and the lower water-bearing zone (not currently impacted by the perchlorate plume). To date, perchlorate has not been detected in Well No. 56-1, however modeling studies completed by Lockheed Martin Corporation indicate that Well No. 56-1 may become impacted by the perchlorate plume in the future, assuming existing pumping conditions continue. The perchlorate detected in the well would be the result of the perchlorate plume in the middle water-bearing zone migrating to the well, not perchlorate moving through the lower zone.

The annual production (converted to a daily rate in gpm) from Well No. 56-1 for the years 1995 to 1998, was 553 gpm, 1,408 gpm, 864 gpm, and 1,345 gpm, respectively (calculated from the annual amounts of 891 acre-feet, 2,271 acre-feet, 1,393 acre-feet, and 2,170 acre-feet provided in the SBVWCD reports). During this period, water from GCC Well 56-1 was used for agricultural purposes. If MVPC began taking their daily allocation of 900 gpm from GCC Well No. 56-1, pumping from Well 56-1 would not be increased, rather the additional water for agricultural purposes would be supplied by other GCC wells. Therefore the actual pumping from the well would not increase due to the project pumping and there would be no significant effect on the perchlorate plume migration.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

87. Please provide staff with a description of the method and the calculations used to analyze the results of the aquifer tests and a description of the method and the calculations used to predict the radial influence of the proposed project pumping.

RESPONSE:

Data collected during the constant rate pump test conducted in MVPC Well No. 1 were used to determine an estimate of transmissivity, T. A rough estimate of transmissivity was determined manually by using the aquifer test analysis formula for a confined aquifer under equilibrium conditions. This was accomplished using the constant pumping rate of 1,400 gpm and the maximum drawdown observed in Well No. 2. The value of T was compared to estimates of T using the specific capacity values obtained during the step discharge test in the well. The radial influence of pumping the project wells on other regional wells within the lower water-bearing zone was then estimated by using the calculated transmissivity value and extrapolating for a higher pumping rate. A pumping rate of 4,000 gpm was used to determine an estimate of drawdown at various distances away from the pumping well. To facilitate estimating the worst case drawdown scenario, the pumping was assumed to occur only within MVPC Well #1. In reality, the drawdown in these production wells will vary due to the heterogeneity of the aquifer, pumping occurring with the production wells, variations in pumping cycles within the on-site production wells, and diurnal and seasonal fluctuations in regional groundwater levels.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

88. Please provide staff with an analysis of the radial influence of the project pumping on the middle water-bearing zone and an analysis influence of the project pumping on the vertical gradient between the middle and lower water-bearing zones.

RESPONSE:

Appendix K of the AFC provides an estimate of the impact of pumping the two on-site production wells on water levels in adjacent production wells that produce groundwater from the lower water-bearing zone. It was estimated that as much as 5 feet of additional drawdown (see revised Figure 6.14-9 in the Supplement to Volume 3 of the AFC) would be observed in the closest production well, COLL Mountain View #2 (screened in the lower zone), and over 2 feet of drawdown in the COLL Richardson #1 (screened in the lower zone) and Richardson #2 (screened in the middle and lower zones) wells. It is our understanding, based upon recent discussions with the City Engineer from the City of Loma Linda, that pumping from Richardson #2 has now been discontinued, primarily due to the detection of perchlorate and TCE in the well.

Extraction of groundwater from the existing on-site production wells will not have a noticeable effect on the lowering of water levels in production wells screened in the middle water-bearing zone in the vicinity of MVPC due to the thickness and low permeability of the lower aquitard that separates the middle and the lower water-bearing zones. The thickness of the middle aquitard in the vicinity of MVPC is estimated to be as much as 45 feet based on well logs and the permeability is less than 0.4 feet per day.

Water levels in Victoria Farms Well #3, which is approximately 680 feet northwest of MVPC Well #1 and is the closest middle water-bearing zone well to the on-site wells, were measured during the 6-day pump test conducted in MVPC Well #1. The difference between the initial water level in the Victoria Farms well and the water level at the end of the pump test was less than 2 feet, even this change in water level may not have been associated with the pumping from the on-site wells but rather a result of the daily fluctuations as seen in the on-site production wells as noted during the pre-test water level monitoring.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Soil and Water Resources**

REQUEST:

89. Please provide staff with a monitoring plan that lists local wells to be monitored, timing relative to project start-up for the pre-project monitoring, and a time table indicating the frequency of monitoring after the plant begins operations.

RESPONSE:

Assuming the MVPC project relies on the two existing on-site production wells (and an additional lower zone well), and GCC Well No. 56-1 to provide water to the facility, the following lower water-bearing zone wells would be proposed to be monitored on a periodic basis:

(1) COLL Mountain View #3 (this is a lower zone well that will replace the older Mountain View #1 well)
(2) COLL Mountain View #5 (this is a new well that will take the place of Mountain View #2)
(3) COLL Richardson #1
(4) COLL Richardson #4 (this well will take the place of Richardson #2)
(5) GCC Well #56-1

Water levels in these wells would be measured on a monthly basis for the first six months following the project start up and thereafter on a quarterly basis. Purveyor staff would most likely collect water level data, although MVPC staff may receive permission to monitor these wells as well. TCE and perchlorate monitoring data would continue to be provided from the WSCP program for these wells; this data would be summarized in a monitoring report submitted quarterly by MVPC.

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MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Traffic and Transportation**

REQUEST:

90. A table showing the current LOS, capacity and peak hour traffic.

RESPONSE:

A table depicting the current AM and PM peak hour traffic volumes, number of lanes, capacity and existing level of service (LOS) for 18 signalized intersections impacted either by the pipeline construction itself or delivery of construction personnel and materials is under preparation. Upon completion of signalized intersection surveys and table completion the table will be submitted. The answer should be complete by July 28, 2000.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Traffic and Transportation**

REQUEST:

91. A discussion of the impact that construction and/or operation will have on the impacted intersections.

RESPONS:E

The existing traffic data, AM/PM peak hour volumes and volume-to-capacity (V/C) ratios which indicate the current LOS are used as the basis for the project traffic impact analysis. To the existing intersection volumes a worst case scenario represented by an increase in traffic from 668 daily employees (568 for plant construction and 100 for pipeline construction) and 30 truck deliveries is added to determine the project impact created by the project. If any significant impact is noted (as defined by traffic demand exceeding capacity) suitable mitigation will be identified and evaluated. However, until these current traffic counts are completed, it is estimated that, based upon the original ADT capacity analysis, no significant unmitigatable impacts are created by the project. Construction will proceed through the intersections along the route as have the many other projects SoCalGas has completed. Usually the large intersections are handled as special crossings. They are excavated by a small crew and prepared ahead of the main pipe installation. Traffic is controlled as the intersection is opened up one lane at a time. Usually when the main pipe crew gets to the intersection, they can cross with the pipe in one day. Then the special crossing crew will perform the backfill and paving as the larger pipe crew moves on. Traffic is maintained by use of street plates.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Traffic and Transportation**

REQUEST:

Please provide the following information for the linears:
92. The construction schedule associated with each linear.

RESPONSE:

The only linear is the gas pipeline. Gas pipeline construction is projected to last for eight (8) months as described in the manpower estimates for Request 92.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Traffic and Transportation**

REQUEST:

Please provide the following information for the linears:
93. A monthly breakout of the construction manpower schedule for each linear.

RESPONSE:

During the eight (8) month period the personnel numbers will remain constant, except for the very beginning and end. The workforce will start with approximately 30 people, ramp up to approximately 100 people and, near the completion during testing, tie-in and final cleanup, personnel numbers will decrease to 20 or 30. Ramp up, testing, and tie in should each last 3 to 4 weeks.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Traffic and Transportation**

REQUEST:

Please provide the following information for the linears:

94. A monthly schedule that indicates the truck deliveries of equipment, materials and supplies.

RESPONSE:

Regarding materials, all small materials will be delivered to a staging area usually at the main yard. These materials only take up a small area, 50 by 100 feet. The pipe material is delivered to the worksite on a daily basis based upon the installation adjacent to the trench ahead of the main pipe work.

The equipment involved in construction of the pipeline include those typical for street based trenching and pipeline. This includes a backhoe, a crane, a delivery truck, a front-end loader, dump truck and rollers for paving, and small miscellaneous vehicles. These will be delivered at commencement of construction, staged at the site, and will move with the trench s progression. Special equipment may be needed for boring under railroad tracks or the Santa Ana River.

Supplies will be delivered periodically to the small supplies staging area.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Traffic and Transportation**

REQUEST:

Please provide the following information for the linears:

95. The area that will be used by the linear construction projects for workforce parking and the laydown of equipment and supplies.

RESPONSE:

Typically, during construction of a project this size there would be one staging area to process the dirt for backfill. Basically screening the soil for backfill. At the same location or another location (two locations total) there would be the construction office, small materials storage and a small area for some fabrication work and meeting place in the morning for work direction. On other projects this all may be completed at one location in approximately a 200 by 400 foot area. Some projects have two locations, one 200 by 200 and the other 300 by 100. In addition, the gas pipeline spread will just move along the road. Personnel, equipment, trucks, pipe and pipe trucks will, in fact, move along the road. The spread typically is 2000 to 3000 feet in length as it moves along. Since the work progresses from an average of 300 to 500 feet per day, areas ahead have to be opened up for the next day s work as well as the previous day s work covered up.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

99. If the isolation valves are to be above ground, please describe the valves location, size, and visual characteristics.

RESPONSE:

There will be at least two (2) and up to four (4) isolation valves installed along the pipeline. One valve will be installed where the pipeline taps into the SoCalGas supply transmission line, one will be installed at or very near the power plant, and two will be installed along the route at locations to be determined by SoCalGas. Typically, there is no more than 8 miles of pipeline between isolation valves. These valves may be installed above or below ground. If installed above ground they are usually fenced in to an area approximately 20 X20 . The valve and piping itself is typically less than 6 -8 in height. If installed above ground, the valves will be in adjacent vacant land located throughout the gas pipeline routes. If installed below ground, they are usually under a city street and accessed via manhole.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

100. If the metering facility is to be above ground, please describe the facility s location, size, and visual characteristics.

RESPONSE:

The metering facility is expected to be installed inside the power plant grounds. The meter set and related equipment will require a 30 x60 plot of land. The meter set assembly will be approximately 54 in length from riser to outlet flange (where it connects with the power plant s houseline) and not exceed 6 - 8 in heights. There will be two piping runs following, one for the meter and one for the bypass. The bypass run will include at least one valve. The meter run will include a valve at the inlet and outlet of the run. The meter run will also include a 16 diameter ultrasonic meter. Either just upstream or downstream of the meter runs, there will also be a check valve. Also installed on this plot and located at least 15 from the nearest flange is a small shack housing the Gas chromatograph. The shack will sit on an approximately 4 x6 pad and will likely be less than 9 in height. The entire facility will likely not be visible from off site. If visible, it will be a small low-to-the-ground facility blending with existing and proposed structures at the site.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

101. Please review the northern boundary of the viewshed map and provide a revised map as appropriate.

RESPONSE:

Figure 6.6-1 has been revised as requested (attached).

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

102. Please provide the diameter of the proposed gas pipeline.

RESPONSE:

The diameter of the proposed gas pipeline is 24 .

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

103. Please provide a photograph of the bridge location where the pipeline would be hung over the railroad tracks. Please provide a written description of the position of the pipeline on the bridge.

RESPONSE:

Photograph of gas pipeline crossing at railroad tracks is attached, as Figure VIS-103-a. At all railroad track crossings, the project proposes to place the gas pipeline below grade (it would not be hung from bridges at these locations). The pipeline would therefore not be visible at railroad crossings. Visibility during construction would be limited to approximately a one to two-month period, and would be similar to other pipeline or trenching activity.

The pipeline will most likely be bored under the railroad crossing and span across the wash on the western side of the crossing. Figure VIS-103-a shows an existing 6 gas pipeline spanning the concrete lines wash and passing under the rail road tracks. The new 24 gas line will be similarly constructed.

Figure VIS-103a

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

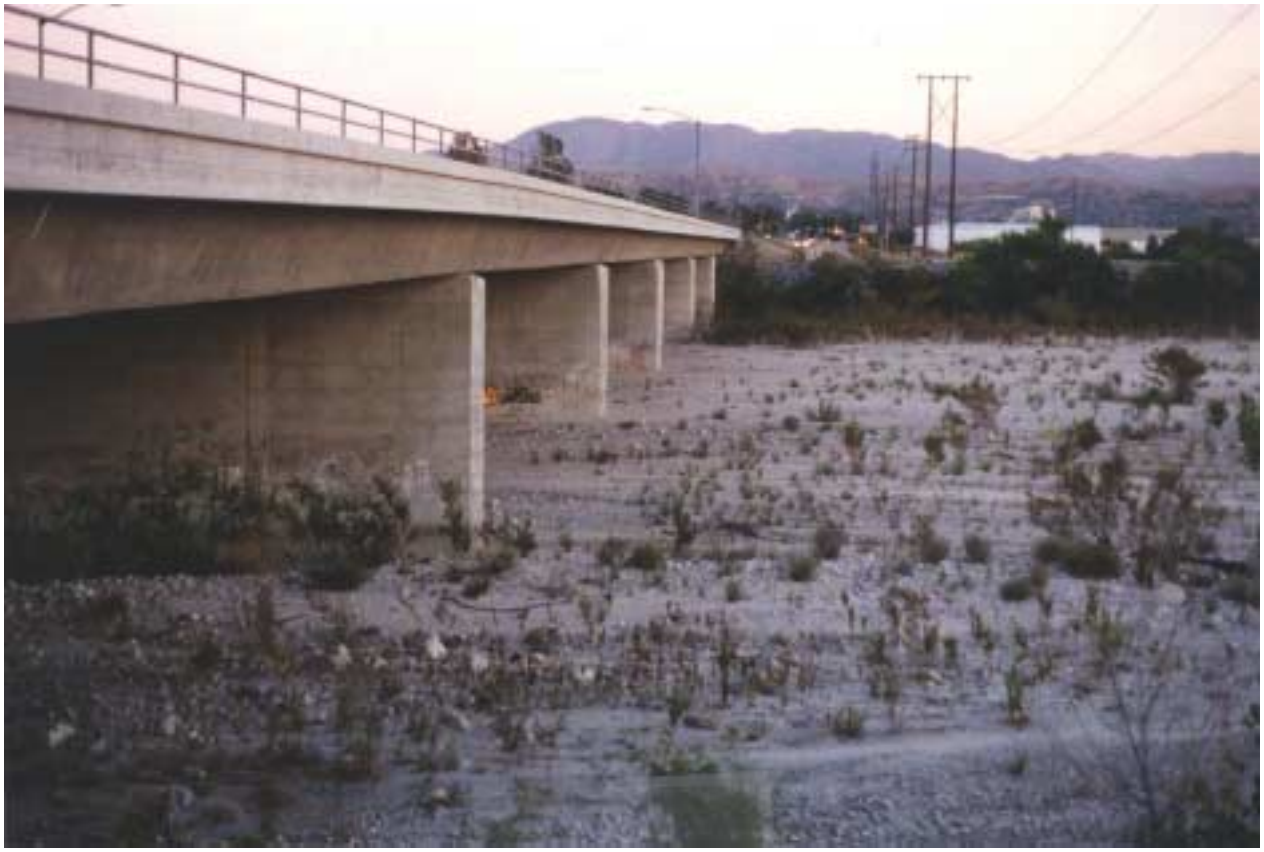
Technical Area	**Visual Resources**

REQUEST:

104. Please provide a photograph of the pipeline crossing of the Santa Ana River. If the crossing would be visible from the planned Santa Ana River Trail (SART), the photograph should be taken from the SART. Please provide a written description of the position of the pipeline on the bridge.

RESPONSE:

Photographs of the vehicle overcrossing of the Santa Ana River are attached, as Figures VIS-104a and VIS-104b. The gas pipeline crossing at this location will be below-grade, and therefore not visible from SART or other nearby areas. Visibility during construction would be limited to approximately a one to two-month period, and would be similar to other pipeline or trenching activity.



VIS-104a

Figure VIS-104b

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

105. Please provide a photograph of the golf cart/foot bridge crossing. Please also provide a written description of the position of the pipeline on the bridge and the pipeline s visibility from the banks of the Twin Creek Channel and other locations on the golf course.

RESPONSE:

Photograph of wastewater discharge line crossing of the Twin Creek Channel at the golf course bridge is attached, as Figure VIS-105a. The pipeline crossing at this location will be hung along the north side of the existing golf cart bridge. The golf course, owner of the golf cart bridge, is primarily located below the berm. Consequently, usually only the top of the bridge is visible from the course. There is a tee box located east of the bridge and a tee box and fairway west of the bridge that are elevated. From these locations the bridge is in full view. From the eastern tee box a golfer looking backwards from the tee box would see the water pipe attached on the north side of the bridge. The pipeline will also be visible from the northern (upstream) portions of Twin Creek Channel. Given the pipe s relatively small diameter (12") and the existing steel girder nature of the bridge, the pipeline is not considered to adversely affect views in these locations. Visibility during construction will be limited to approximately a one to two-month period, and would be similar to other pipeline or trenching activity.

Figure VIS-105a

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

106. Please provide five sets of 11 x 17 color reproductions of revised setting photographs and photosimulations at actual life-size scale for KOP s 1, 2, & 3.

RESPONSE:

The before and after photos for KOP s 1, 2, and 3 have been revised as requested. They are provided in an 11 x361/2 format with three sets as agreed upon provided under separate cover. In addition, as requested in data request number 111, KOP 4 has been relocated and formatted consistent with revised KOP s 1, 2 and 3. We have also provided a reformatted aerial photo of the site, in before and after conditions. Five sets of the revised KOP photos and aerial photos have been provided under separate cover. As requested, these photos were reformatted for printing in a larger format in order to more accurately represent a viewer s field of view. The photos have been formatted to be viewed at arm s length (approximately 22 inches), such that the photo encompasses the viewer s peripheral field of vision. The calculations of the viewing length is shown on Attachment VIS-106A. These photos were field-checked to confirm accuracy.

ATTACHMENT

VIS-106A

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

107. In some cases, the change in image scale may warrant a re-evaluation of impact susceptibility and/or impact severity and significance. Please review the analytical conclusions and provide revised text as appropriate.

RESPONSE:

The reformatted photos provide better context for KOP s 1, 2 and 3. Each of the reformatted before and after photos were reviewed for KOP s 1, 2 and 3, with regard to the AFC discussion in Section 6.6, Visual Resources. The reformatted images, although providing a more realistic assessment of the project s visual effects, do not affect the discussion or conclusions contained in the AFC.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

108. Please explain the discrepancy in distances between KOP 2 and the project site.

RESPONSE:

The AFC discussion on page 6.6-24 is correct. The discussion on page 6.6-15 should read approximately 0.45 miles , not greater than 0.45 miles .

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

109. Please define foreground, middleground, and background distance zones by mileage range as used in the AFC.

RESPONSE:

The terms foreground , middleground and background as used in the AFC are in reference to the field of vision as shown in the respective photographs. The distance represented by these terms varies with the photo (i.e., the distance between the foreground and background varies depending on the field of view in the photo). For this reason, no particular mileage band is associated with the zones.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

110. Since overall viewer exposure is typically based on project visibility, distance zone, numbers of viewers, and duration of view, please explain the basis for the low to moderate rating for viewer exposure along the SART as presented on page 6.6-19.

RESPONSE:

The Low to Moderate Viewer Exposure rating for SART was based on the relatively heavy vegetation along the river bank and the embankment slope between SART and the project site, both of which serve to partially screen the project from SART viewers. After reviewing the revised KOP 4 photos at their new location, the Viewer Exposure may be more appropriately described as Moderate . Refer to the discussion for KOP 4 (Response to Request 112), based on new KOP location and new photos.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

111. Please revise the location of KOP 4, moving it to the east of the proposed project site, the minimum distance necessary to bring the proposed project into the image frame with minimal foreground vegetation screening as viewed by westbound users of the SART. Provide five sets of 11 x 17 photographs.

RESPONSE:

As requested, KOP 4 photos were taken looking southwesterly direction from a distance further to the east. Three sets of full views, 11 x 36_ , are being provided concurrently under separate cover.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

112. The change in the location of KOP 4 may warrant a re-evaluation of impact susceptibility and/or impact severity and significance. Please review the analytical conclusions and provide revised text as appropriate.

RESPONSE:

As described above and as requested in data request 111, the revised KOP 4 location was selected as the worst-case view of the proposed power plant from SART, in the vicinity of the existing access road connection to SART. The foreground is the existing SART dirt access road, middleground is existing trees and vegetation along the south side of the SART, and background contains existing power plant units and a hazy skyline. No other off-site buildings are visible in this view. As noted above, due to proximity to SART and relative absence of mature trees in this location, the Viewer Exposure is considered Moderate . Proposed Units 3 and 4 would occupy the middleground of this view, and would dominate the view due to minimal landscape screening. Proposed units would appear taller than existing trees, and existing power plant structures appear more distant in the middleground. Therefore, contrast with existing structure and vegetation would be considered Moderate to High , and Scale/Spatial Dominance would be considered Significant without proposed mitigation. It should also be noted that this KOP is the closest location along SART to the proposed Units 3 and 4. Overall visual impact severity is considered Moderate to High without proposed mitigation. In consideration of the revised KOP 4 view, the project proposes to install a combination of berm and/or specimen size trees in this area to reduce the Overall Visual Impact Severity to Moderate . As the SART is not anticipated to be constructed in the near future, the specimen trees should have adequate time to provide sufficient screening in this location.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

113. Given that much of the natural gas pipeline route would follow streets within residential areas, please describe the extent to which equipment, materials, and personnel would be visible along the route and the length of time that a typical construction spread would be visible to adjacent residences.

RESPONSE:

The proposed gas pipeline is planned to be constructed over an approximate eight-month period. To accomplish this, the project proposes a single staging area that would move with pipeline construction activities. The estimated exposure for adjacent residents or businesses would be approximately one month at any one location. Construction activities would be similar to typical pipeline trenching, and would include appropriate traffic safety and related measures.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

114. Please describe the landscape characteristics that result in a low rating for scenic quality along the pipeline routes.

RESPONSE:

The proposed gas pipeline would traverse primarily urban/agricultural areas, consisting primarily of typical urban streetscape with non-native trees. The landscaped areas within the road rights-of-way and in adjacent areas are not known to possess unique aesthetic qualities. Numerous sites along the pipeline routes are vacant, previously modified sites.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

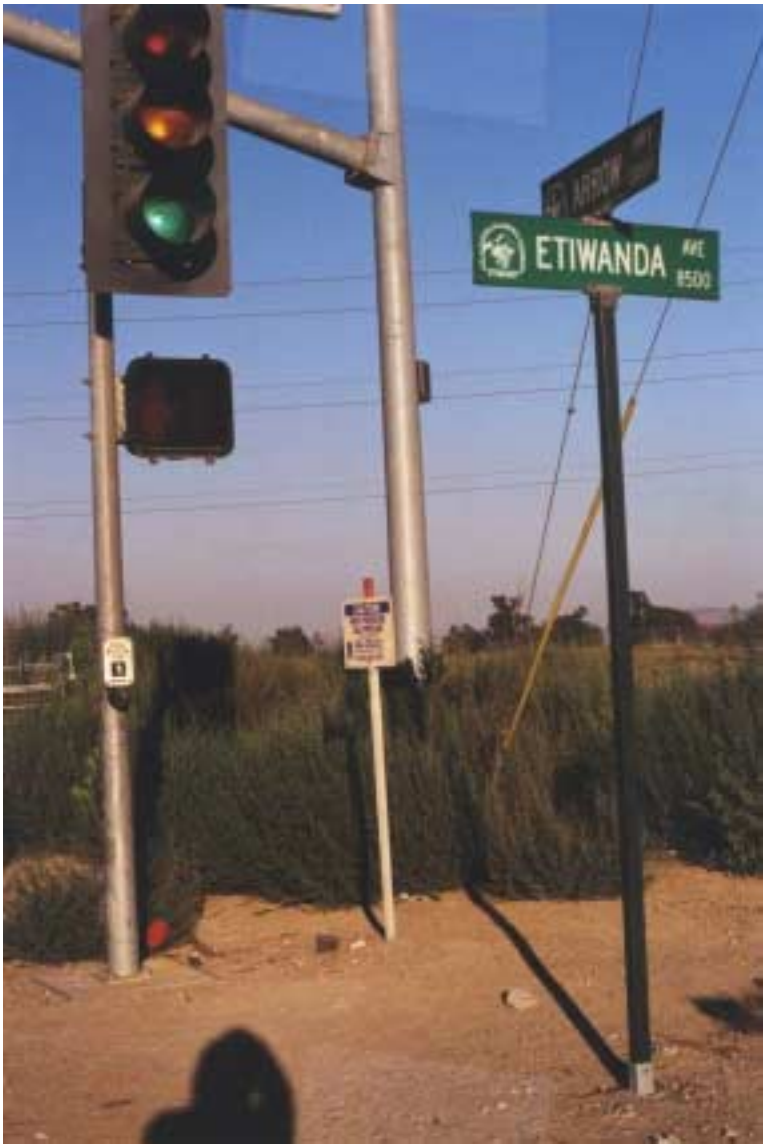
Technical Area	**Visual Resources**

REQUEST:

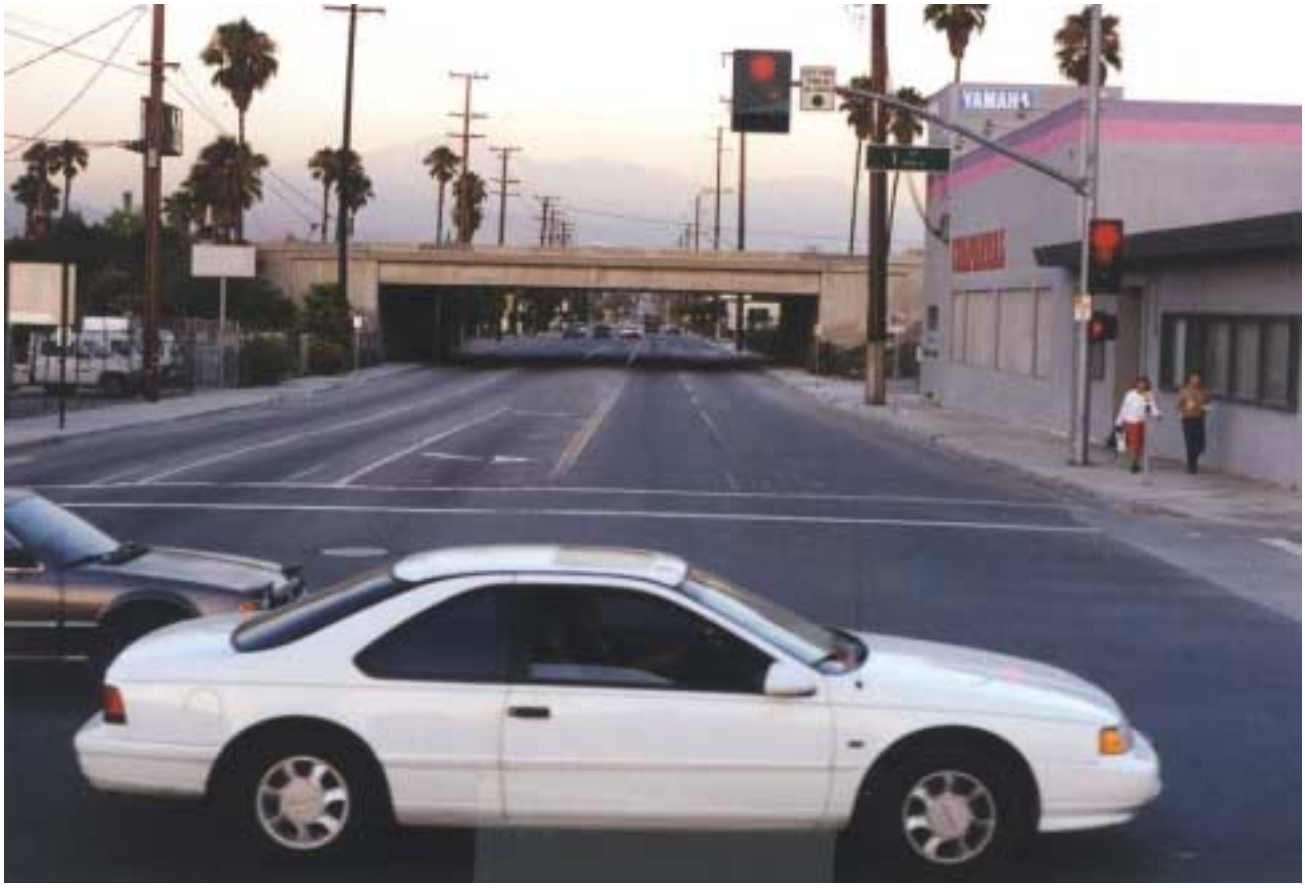
115. Please provide at photographs that are representative of the landscape along the gas pipeline route, including staging areas.

RESPONSE:

Refer to the attached aerial and ground photos taken of the proposed gas pipeline route (Figures VIS-115a through VIS-115g). The pipeline staging area is proposed to move concurrent with pipeline construction activity, and would occur within existing road rights-of-way.

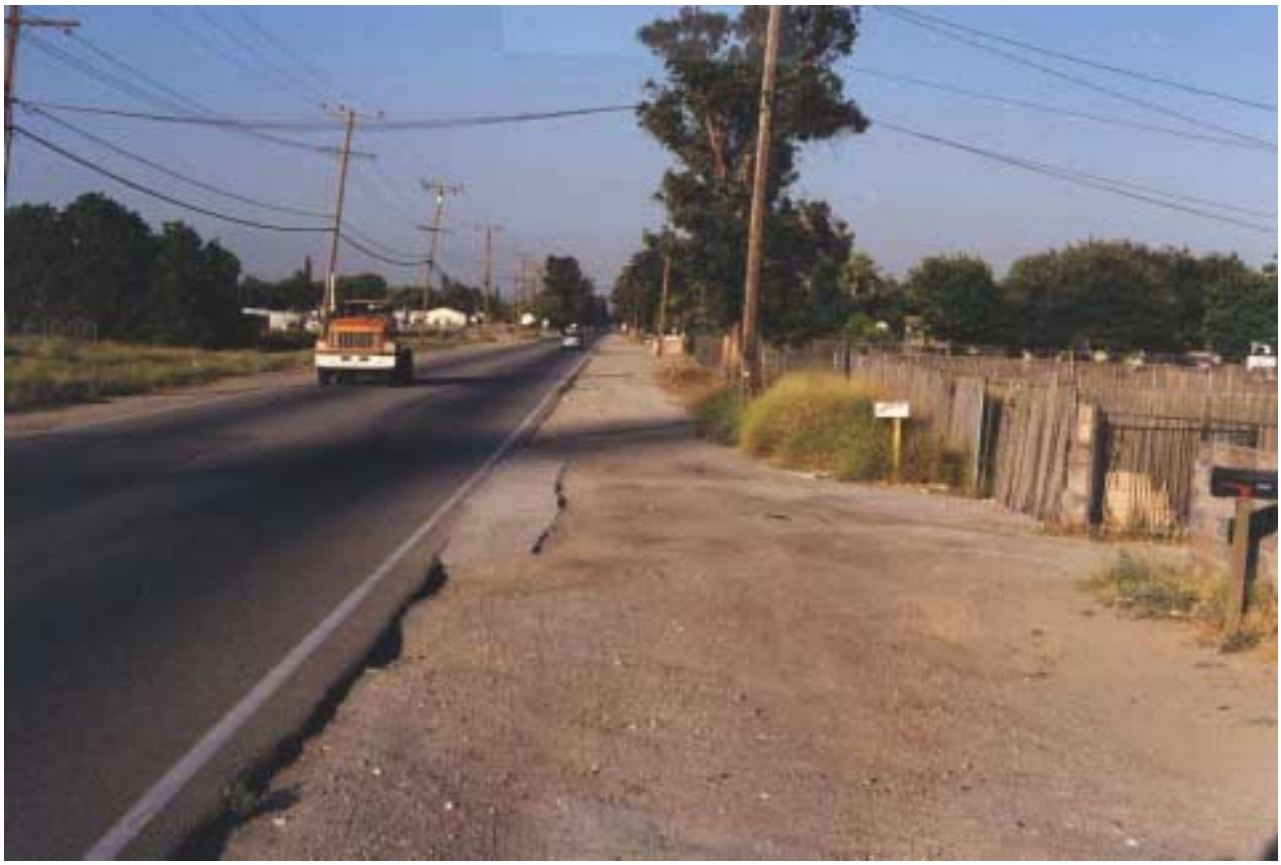


VIS-115a



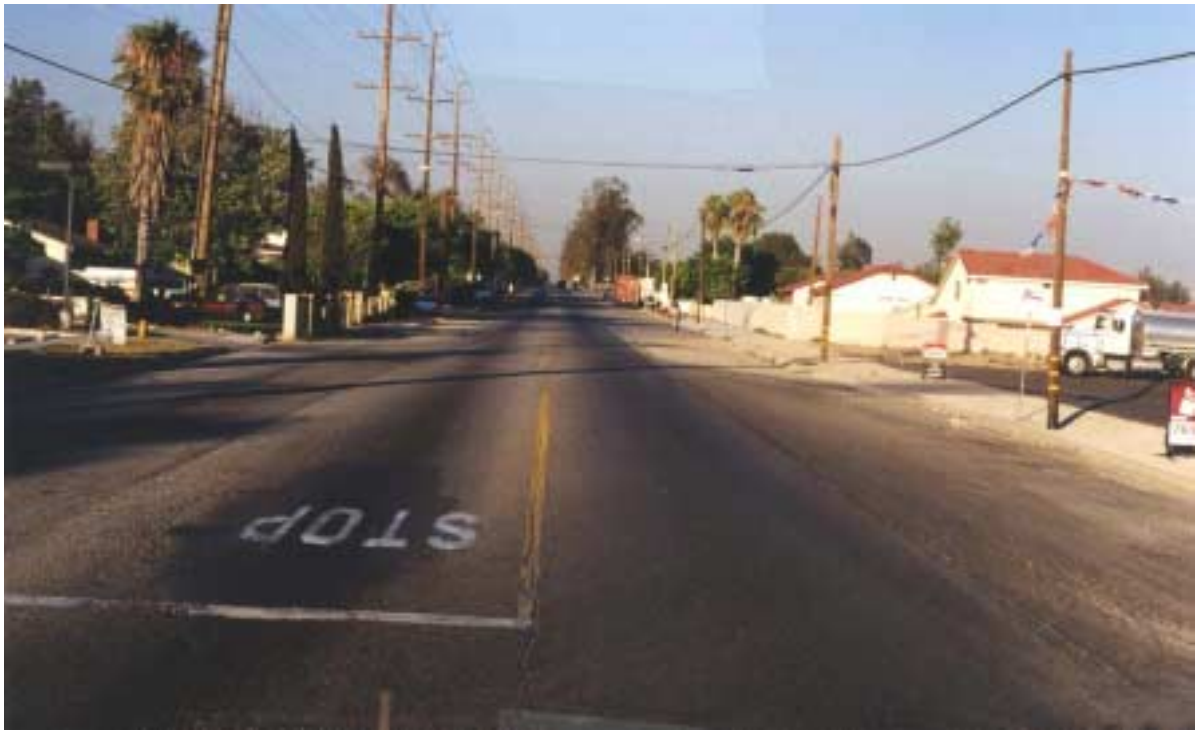
VIS-115b

VIS-115c



VIS-115d

VIS-115e



VIS-115f

VIS 115g

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

116. Please provide the heights of the adjacent 66kV, 115kV & 230kV transmission line structures.

RESPONSE:

Highest points from grade for each category of transmission line is as follows:

1. 230 kV — 170 ft.

2. 115 kV — 102 ft.

3. 66 kV — 74 ft.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

117. Please describe the lighting to be used on units 3 and 4 including type, location, intensity, and typical duration of use.

RESPONSE:

The lighting system shall be designed in accordance with illuminating Engineering society of North America (IESNA) illumination level recommendations.

All outdoor lighting shall be controlled by photocells.

Frequently switched indoor lighting (such as office and maintenance areas) shall be controlled by wall mounted lighting switches. Infrequently switched indoor lighting (such as the turbine building) shall be controlled by panel board circuit breakers.

Self-contained battery backed emergency lighting and exit signs shall be furnished to provide safe personnel egress from buildings during a total loss of plant power. Emergency lighting shall be designed to maintain the necessary illumination for a minimum of 90 minutes.

A typical lighting intensity schedule for a similar 1000 MW power plant is shown in Attachment VIS-117A. Submitted separately under separate cover are 12 copies of a set of engineering diagrams depicting typical lighting diagrams for power plants.

ATTACHMENT

VIS-117A

Table 2
Foot-candle Lighting Intensities

Location	Intensities (FC)
Emergency Lighting	2-5
Administrative Building	
Hallways, interior stairways, service areas	20
Offices	70
Building entries and entrance stairways	20
Cafeteria	50
Compressor house, if required	30
Control house	
Control room (front and back of panel)	50
DCS computer room	50
Emergency exit/entry lighting	3
UPS room	30
Cooling towers, equipment area	5
Furnaces, separators (at top of bay)	5
Gage glasses (at eye level)	5
Garage and fire house	10
Gate house, entrance gate and inspection	30
Heat exchangers	5
Laboratories and office	50
Loading platforms for trucks, tank cars	10
Mechanical equipment and other service areas	20
Machine shops	50
Main roads and parking lots	1
Outdoor pump areas	10
General illumination	1
Pump rows, manifolds, frequently used valves	10
Transformer areas and switchyards	10
Stairways	10
Switchgear, MCC, and battery rooms	30
Tank farms, stairs, and gauging area	1
Toilet, locker rooms, showers	20
Walkways and platforms, process areas	5
Warehouses and storage buildings (Inactive/Active)	5/10

Notes:

1. Lighting intensities are measured at 30˚inches above floor level. A maintenance factor of 0.7˚is used to calculate these intensities.
2. Utility areas will be considered as process areas for lighting intensity purposes.
3. For metric applications, 1˚fc = 10.78˚lux.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

118. Please state whether the applicant would also commit to using timers, sensors, and/or switches to keep lights off when they are not needed.

RESPONSE:

MVPC does commit to using timers, sensors, and/or switches to keep lights off when not needed.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

119. Please specify for which types of lighting (task area, structure, etc.) various controls would be provided.

RESPONSE:

For exterior lighting, the concern of visual resources, structure lighting will be both directed and covered so as to provide only necessary access illumination and navigational illumination. Task area lighting will be equipped with switches enabling unnecessary lighting to be switched off when not needed.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

120. Please provide a statement of impact significance for Key Observation Point 2.

RESPONSE:

AFB Page 6.6-26 should have read, The overall severity of impact of the proposed structures on this view would be low to moderate.

Data Response 107 provides a discussion of the reformatted view. In that answer we indicate that the conclusions are not affected. This is true for Key Observation Point 2 as well.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

121. Please provide the following information regarding the cooling tower vapor plumes:

i. Quantified estimates of the expected maximum and average plume height (above the stack), length, width (diameter), and direction.

j. Quantified estimates of the expected frequency of occurrence and duration, specifying:

i) The number of hours that the expected maximum and average plumes will be visible, for each hour of the day per year;

ii) The total number of hours per year that the expected maximum and average plumes will be visible;

iii) The percentage of the total number of hours per year that the expected maximum and average plumes will be visible;

iv) The number of daylight hours per year that the expected maximum and average plumes will be visible; and

v) The percentage of daylight hours per year that the expected maximum and average plumes will be visible; and

k. Please calculate the values requested in b above to eliminate periods when fog occurs.

l. Please calculate the values requested in b above to eliminate periods when visibility will be reduced to less than specified distances (such as less than one mile and less than five miles).

m. Provide the data, assumptions, and calculations used to derive the estimates, including the model used for a, b, c and d above.

RESPONSE:

j. A water-vapor plume will be visible from the power plant s cooling towers for some number of hours per year depending on meteorological conditions. For the purposes of this analysis, a plume is described as visible if the moisture in the plume could condense to form visible water droplets.

However, whether one could, in fact, see the water-vapor plume would also depend on whether

the observation is made during daylight or nighttime hours; if during nighttime hours, whether there is sufficient light (from natural or anthropogenic sources) to reflect off of the plume; and whether there are physical obstructions, such as terrain, or meteorological obstructions, such as fog, that would prevent observation of the plume. The height and width of the visible water-vapor plume from the cooling towers will depend on meteorological conditions.

The height of the plume (whether visible or not) will be a function of the buoyant rise of the air from the cooling towers. When present, the height of the plume from a cooling tower will average approximately 97 meters above ground level. The maximum height of the visible water-vapor plume from a cooling tower is estimated to be approximately 575 meters above ground level. The width of the visible water-vapor plume will depend on the length of time it takes for the plume to be diluted with ambient air such that the moisture content of the air drops below the dew point, and hence the plume becomes invisible. The average width of the visible water-vapor plume from a cooling tower is estimated to be approximately 23 meters. The maximum width is estimated to be approximately 159 meters. The estimates of the height and width of the visible water-vapor plumes are less certain than the estimates of the frequency presented below.

Table VIS-121a indicates the frequency with which the water-vapor plume from the cooling towers would be visible for various plume lengths.

As shown in Table VIS-121a, a plume of some length will be theoretically visible 273 hours per year; however, only 138 of these hours will be during daylight. During nighttime hours, an observer could see the plume only if there were sufficient natural or artificial light. Of these theoretically visible water-vapor plumes, 78% of them will be less than or equal to 100 meters in length, 86% will be less than or equal to 200 meters, and 96% of them will be less than or equal to 1,000 meters. While the above conclusions are based on an analysis of a single cooling tower cell, all of the cooling towers are expected to result in a visible water-vapor plume under similar meteorological conditions.

k. The requested frequencies for the cooling tower visible water-vapor plumes are shown below:

   i) For the number of hours that the plume will be visible, for each hour of

the day per year, see above discussion.

ii) The number of hours per year that a water-vapor plume from the cooling towers will be theoretically visible is estimated to be 273 hours per year. This number will vary with year-to-year variations in meteorological conditions and plant operation.

iii) A water-vapor plume from the cooling towers will be theoretically visible approximately 3.1% of the hours in a year. This percentage is obtained by dividing 273 hours per year by the total number of hours in a year (8,760).

iv) The number of daylight hours per year that a water-vapor plume from the cooling towers will be theoretically visible is estimated at approximately 138 hours per year. This number will vary with year-to-year variations in meteorological conditions and plant operation.

v) A water-vapor plume from the cooling towers will be theoretically visible during approximately 3.1% of the daylight hours in a year. This number is obtained by dividing 138 hours by the number of daylight hours in a year (4,380).

The modeling results presented above and in Attachment VIS-121A show that water-vapor plumes from the cooling towers will be visible for approximately only 138 daylight hours per year and that the size of many (92%) of the visible plumes during daylight hours will be relatively short (<500 meters in length). The plumes will tend to form in the winter months and during early morning hours when the temperature is low and humidity is relatively high. This is also the time when fog tends to form, and if fog is present, plumes will tend to blend into the fog. The fog will not prevent the formation of visible water-vapor plumes; however, the fog will make it more difficult, if not impossible, to see the visible water-vapor plumes.

l. We do not have statistical data regarding visibility conditions at Ontario Airport to estimate the effect of fog conditions on the frequency of visible plumes from the cooling towers.

m. We do not have statistical data regarding visibility conditions at Ontario Airport to estimate the effect of low visibility on the frequency of visible plumes from the cooling towers.

n. The data, assumptions, and calculations used to derive these estimates are presented in Attachment VIS-121A.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Table VIS-121a
MVPC
Length of Cooling Tower Visible Water-Vapor Plume vs. Frequency of Occurrence

Plume Length (meters)	All Hours	Daylight Hours
† 100	213	125
† 200	234	134
† 500	251	134
† 1000	261	135
† 2000	270	138
All	273	138

ATTACHMENT

VIS-121A

Attachment AQ-121A
Methodology and Assumptions for Responses to Data Requests Regarding Visible Water Droplet Plumes from Cooling Towers

Overview

The responses to Data Request 121 were prepared using a visible water droplet plume modeling system developed by Sierra Research. The basic principle involves modeling the dilution of a water vapor plume as a function of wind speed, distance, and stability class from the release point, similar to the Gaussian approach for modeling gaseous pollutants. As the plume is diluted, the temperature of the plume approaches ambient temperature, and the moisture content of the plume approaches the moisture content of the surrounding ambient air. At any given point along the plume, one can use the dilution factors to determine the plume temperature and moisture content, given knowledge of the temperature and moisture content of the plume at the time it leaves the release point, and of the temperature and moisture content of the ambient air. Knowing the temperature and moisture content of the plume at that point enables one to determine whether the moisture will condense at that point to form a visible water plume. By performing these calculations along a series of points, one can determine whether a visible plume will form and, if so, the length of the visible plume for each hour evaluated.

The modeling system includes the following components:

- A modified version of the Industrial Source Complex Short Term Model Version 3 (ISCST3 00101) is used to determine plume dilution through the evaluation of water droplet concentrations determined along a series of receptors placed along the plume centerline. These calculations are performed for each hour of the year using a standard modeling meteorological data set.
- A second module, CLAUSIUS, determines the amount of dilution of the plume that is required for the visible plume to evaporate.
- A third module, DISTANCE, determines the distance (along the plume centerline) that the plume is visible.
- A fourth module, COUNT, summarizes the statistics and prints a report.

Each of these components is discussed in more detail below. An electronic copy of the modeling system is being provided to the Commission under separate cover as a confidential filing.

Modified ISCST3

ISCST3 was modified to provide for the determination of pollutant concentrations along the centerline of a plume. The centerline of the plume is represented by flagpole receptors along a single radial from the stack. The model produces an output file, which includes concentrations for each receptor along the radial for each hour of the year. Relative to the concentration present in the stack, the concentrations reported at each receptor represent the degree of dilution of the plume with ambient air at that point. The modified version of ISCST3 has the following features:

- Calculations can be performed for up to 100 receptors placed along the centerline of the plume.
- Default ISCST3 features that prevent calculations of pollutant concentrations at locations close to the emission source have been disabled.
- To avoid ignoring meteorological conditions where visible plumes are likely to be formed, wind speeds of less than 1.0 m/s are set to a wind speed of 1.0 m/s, to avoid implementing the calms processing feature of ISCST3.
- Concentrations are calculated regardless of whether or not the plume height lies above or below the mixing height.
- Calculations are performed for only simple terrain.
- Calculations are performed for only a single source.

Meteorological data from Redlands for the 1981 calendar year, obtained from the South Coast Air Quality Management District (SCAQMD), were used for the plume visibility analysis. Sounding data, which are included in the SCAQMD data set, are from Ontario Airport. Mixing ratio data were derived from 1981 Los Angeles International Airport surface relative humidity data. The latter data should be applicable to inland sites, such as Redlands, because the mixing ratio typically varies little over distances of 100 miles.

CLAUSIUS

The CLAUSIUS module uses a linear interpolation of water vapor pressure, between the stack exit and ambient conditions, together with the Goff-Gratch formulation of the Clausius-Clapeyron equation for water vapor, to determine the amount of dilution required for the visible plume to not be visible. These calculations are performed for each hour of the year, using the same meteorological data set used for the ISCST3 dispersion modeling analysis. The CLAUSIUS program can perform calculations for various types of sources:

- Sources with a fixed exit temperature
- Sources with exit temperatures at a constant increment above ambient temperatures
- Sources with a fixed moisture content

- Sources where moisture content is a function of ambient temperature
- Sources with a moisture content fixed at a specified relative humidity, given an ambient temperature

In this regard, the modeling system can be somewhat more versatile than other models typically used to evaluate visible water plumes, such as SACTIP (Seasonal/Annual Cooling Tower Impact Program), since combustion sources as well as cooling towers can be treated.

DISTANCE

The DISTANCE module uses the resulting output from ISCST3 and CLAUSIUS to determine the distance along the centerline of the plume where sufficient dilution has occurred such that the plume is no longer visible.

COUNT

The COUNT module summarizes and prints the statistics regarding plume visibility. Available statistical outputs include the number and frequency of hours in which a plume is visible, separately for daytime and nighttime conditions, as well as a frequency distribution of visible plume lengths. The day/night boundary is treated as sunrise/sunset, calculated for every day of the year.

Assumptions

Cooling tower assumptions were derived from data provided by the project's design engineering firm, and reflect worst-case conditions:

- Stack gas exit temperatures = 310.78°K (100°F)
- Stack diameter = 10.973 meters (36 feet)
- Stack gas exit velocity = 4.53 m/sec (14.86 ft/sec)
- Stack gas relative humidity = 100%

Interpretation of Results

The water droplet plume visibility analysis is an approximation technique, which should not be used to establish limiting conditions for the operation of a facility or a particular piece of equipment. The following caveats should be observed in interpreting the model results:

- Meteorological conditions reflecting low mixing heights may not necessarily be properly modeled. Little data are available regarding temperatures and relative humidity levels above the mixing height

at any particular location, such as Redlands, and the plume is no longer in a well-mixed surface layer.

- The model is least reliable at predicting plume visibility under calm nighttime conditions, since both temperature and relative humidity vary strongly with height under those conditions. What is measured at the meteorological station (at a height of 10 meters) may vary considerably from actual conditions at plume height. In general, under cold, nighttime conditions (with shallow radiation inversions), temperatures are likely to be colder, and relative humidity higher, at the height of the meteorological monitor than at plume height, thus resulting in an overstatement of plume visibility during these conditions.

- Latent heat release and absorption are not treated in the modeling system. These effects are likely to be of secondary importance for combustion plumes traveling for relatively short distances, but may play a more important role for cooling tower plumes. Condensation of water droplets in the plume will cause the plume to increase in temperature, while evaporation of those droplets will subsequently cool the plume by a similar amount. These effects are likely to be negligible in the case of combustion sources, where the plume temperature is already 100°F (or more) warmer than the surrounding ambient air, but could be more significant for cooling tower plumes. The effect of ignoring latent heat release and absorption is to slightly underestimate initial plume rise, and slightly underestimate plume length.

- The model results are extremely sensitive to assumptions regarding ambient and stack gas moisture content and relative humidity (as is actual plume visibility). Furthermore, it is not clear that the accuracy of the relative humidity monitors is suitable for the use to which the data are being applied.

Modeling Results

The following table summarizes the hour-by-hour modeling results.

Date (yymmddhh)	Plume Length (m)	Single Cell Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81010202	1,800.0	111.3	111.3	325.0	145.0
81010203	800.0	89.0	125.8	300.4	120.4
81010204	2,000.0	123.3	126.4	290.5	110.5
81010507	*	27.7	*	303.6	123.6
81020313	40.0	0.0	24.4	293.5	113.5
81020314	50.0	5.6	27.7	298.3	118.3
81020315	50.0	1.3	22.3	293.2	113.2
81020316	50.0	12.8	22.6	303.7	123.7
81020317	40.0	0.0	19.1	286.9	106.9
81020318	260.0	27.7	99.4	248.0	68.0
81020319	700.0	39.1	98.9	339.9	159.9
81020320	600.0	37.1	99.6	295.6	115.6
81020321	50.0	28.2	115.1	297.0	117.0
81020322	700.0	43.3	104.4	282.2	102.2
81020323	80.0	52.9	118.5	290.8	110.8
81021914	40.0	0.0	21.1	300.1	120.1
81030912	40.0	0.0	25.0	274.4	94.4
81030913	50.0	13.8	41.3	197.6	17.6
81030914	50.0	13.8	41.3	214.8	34.8
81030915	40.0	0.0	236.7	217.3	37.3
81030916	40.0	0.0	244.8	182.4	2.4
81030917	40.0	0.0	259.1	346.9	166.9
81030918	40.0	0.0	122.1	281.7	101.7
81030919	40.0	0.0	103.8	227.5	47.5
81030920	50.0	26.2	115.4	216.5	36.5
81030921	40.0	0.0	109.2	253.2	73.2
81030922	140.0	34.1	83.7	312.5	132.5
81030923	40.0	0.0	113.2	301.1	121.1
81031012	40.0	0.0	38.3	218.6	38.6
81031013	40.0	0.0	20.0	280.7	100.7
81031014	40.0	0.0	22.8	286.4	106.4
81031015	40.0	0.0	22.8	300.9	120.9
81031016	40.0	0.0	20.8	274.8	94.8
81031017	40.0	0.0	18.6	278.0	98.0
81031018	60.0	24.8	25.1	291.6	111.6
81031019	80.0	42.9	103.8	181.1	1.1
81031020	50.0	29.4	109.2	294.0	114.0
81031021	60.0	47.4	120.1	318.7	138.7
81031022	60.0	36.9	111.9	301.7	121.7
81031023	80.0	45.8	112.6	294.2	114.2
81040611	40.0	0.0	33.8	237.8	57.8
81040612	40.0	0.0	32.5	213.9	33.9
81040613	40.0	0.0	18.3	289.2	109.2
81040614	40.0	0.0	17.6	277.7	97.7
81040615	40.0	0.0	17.6	298.7	118.7
81040616	40.0	0.0	17.6	275.7	95.7
81040617	40.0	0.0	17.7	269.6	89.6
81040618	40.0	0.0	18.1	288.5	108.5

Date (yymmddhh)	Plume Length (m)	Single Cell Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81040619	220.0	24.2	87.4	319.8	139.8
81040620	500.0	29.1	84.0	322.2	142.2
81040621	60.0	34.6	108.4	183.6	3.6
81040622	80.0	43.2	109.9	251.2	71.2
81040623	80.0	45.0	111.3	282.6	102.6
81061502	40.0	0.0	88.5	289.9	109.9
81061503	40.0	0.0	88.5	338.1	158.1
81061602	40.0	0.0	107.8	283.3	103.3
81061603	40.0	0.0	98.5	296.0	116.0
81061604	40.0	0.0	103.8	286.9	106.9
81061913	40.0	0.0	18.9	282.7	102.7
81061914	40.0	0.0	19.0	285.9	105.9
81061915	40.0	0.0	18.1	285.3	105.3
81061916	40.0	0.0	18.0	282.2	102.2
81061917	80.0	16.6	32.3	261.3	81.3
81061918	60.0	21.4	19.6	302.2	122.2
81061919	120.0	46.6	30.8	290.0	110.0
81061920	400.0	44.5	71.1	287.9	107.9
81061921	60.0	36.2	98.5	230.1	50.1
81061922	50.0	33.1	102.4	280.6	100.6
81061923	50.0	29.5	105.7	295.8	115.8
81070402	40.0	0.0	101.1	284.2	104.2
81070403	40.0	0.0	101.1	282.1	102.1
81070404	40.0	0.0	107.8	294.7	114.7
81070405	40.0	0.0	109.8	283.0	103.0
81070406	40.0	0.0	130.3	285.0	105.0
81070407	40.0	0.0	414.0	333.0	153.0
81070711	40.0	0.0	148.8	261.5	81.5
81070712	40.0	0.0	19.1	300.4	120.4
81071214	40.0	0.0	17.6	284.7	104.7
81071710	40.0	0.0	216.3	263.8	83.8
81071711	40.0	0.0	26.4	275.7	95.7
81071712	40.0	0.0	22.3	269.0	89.0
81071713	40.0	0.0	21.0	292.5	112.5
81071714	40.0	0.0	19.1	301.5	121.5
81071715	40.0	0.0	18.0	283.6	103.6
81071716	40.0	0.0	18.0	287.4	107.4
81071717	40.0	0.0	17.4	268.3	88.3
81071718	100.0	15.6	35.0	258.8	78.8
81071719	100.0	41.9	30.1	285.0	105.0
81071720	160.0	52.8	50.4	280.2	100.2
81071721	50.0	15.1	98.5	230.7	50.7
81071722	40.0	0.0	107.8	346.3	166.3
81071723	40.0	0.0	109.8	301.0	121.0
81072214	40.0	0.0	19.6	271.9	91.9
81072215	40.0	0.0	18.0	288.0	108.0
81072216	40.0	0.0	18.1	302.2	122.2
81072217	40.0	0.0	17.8	274.5	94.5

Date (yymmddhh)	Plume Length (m)	Single Cell Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81072218	50.0	19.4	18.5	268.4	88.4
81072219	260.0	27.0	84.0	262.1	82.1
81072220	240.0	49.7	58.8	287.1	107.1
81072221	50.0	28.8	105.7	260.6	80.6
81072222	40.0	0.0	108.9	284.7	104.7
81072223	40.0	0.0	110.8	266.4	86.4
81072313	40.0	0.0	21.0	289.1	109.1
81072314	40.0	0.0	19.1	300.5	120.5
81072315	40.0	0.0	18.0	275.2	95.2
81072316	40.0	0.0	17.7	301.2	121.2
81072317	80.0	16.6	29.3	260.5	80.5
81072318	50.0	19.4	18.4	270.9	90.9
81072319	260.0	26.6	82.4	260.2	80.2
81072320	240.0	50.4	59.3	276.0	96.0
81072321	40.0	0.0	105.7	232.3	52.3
81072322	40.0	0.0	107.8	262.7	82.7
81072323	50.0	28.5	109.8	293.1	113.1
81080311	40.0	0.0	26.7	290.1	110.1
81080312	40.0	0.0	21.4	298.9	118.9
81080313	40.0	0.0	21.4	298.5	118.5
81080314	40.0	0.0	22.3	266.5	86.5
81080315	50.0	11.8	30.3	259.4	79.4
81080316	40.0	0.0	18.1	298.2	118.2
81080317	80.0	15.1	31.7	263.9	83.9
81080318	40.0	0.0	17.9	277.6	97.6
81080319	120.0	45.6	34.7	279.3	99.3
81080320	220.0	44.5	64.9	303.2	123.2
81080321	40.0	0.0	106.8	235.0	55.0
81080322	40.0	0.0	108.9	294.0	114.0
81080323	40.0	0.0	111.8	261.1	81.1
81080411	40.0	0.0	37.1	268.7	88.7
81080512	40.0	0.0	30.5	263.0	83.0
81080513	40.0	0.0	30.6	259.8	79.8
81080514	40.0	0.0	18.9	281.5	101.5
81080515	40.0	0.0	18.1	292.9	112.9
81080516	40.0	0.0	17.7	298.9	118.9
81080517	40.0	0.0	18.3	273.1	93.1
81080518	80.0	34.3	25.9	283.7	103.7
81080519	100.0	43.6	29.6	294.9	114.9
81080520	160.0	51.0	48.2	290.1	110.1
81080521	240.0	49.0	62.9	285.6	105.6
81080522	280.0	51.4	64.8	288.5	108.5
81080523	40.0	0.0	107.8	356.2	176.2
81082010	60.0	16.5	53.3	265.9	85.9
81082011	40.0	0.0	27.5	303.4	123.4
81082211	40.0	0.0	21.5	295.1	115.1
81082212	40.0	0.0	21.5	300.6	120.6
81082213	40.0	0.0	21.0	287.8	107.8

Date (yymmddhh)	Plume Length (m)	Single Cell Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81082214	40.0	0.0	18.1	293.0	113.0
81082215	40.0	0.0	17.6	286.6	106.6
81082216	40.0	0.0	17.4	278.4	98.4
81082217	40.0	0.0	18.1	295.3	115.3
81082218	80.0	29.5	22.3	267.8	87.8
81082219	200.0	41.2	71.6	280.7	100.7
81082220	40.0	0.0	103.4	293.2	113.2
81082221	50.0	8.5	104.7	236.6	56.6
81082222	40.0	0.0	105.7	260.9	80.9
81082223	50.0	18.7	107.8	264.7	84.7
81082415	40.0	0.0	18.1	291.3	111.3
81082416	40.0	0.0	18.1	297.9	117.9
81082417	40.0	0.0	18.0	293.0	113.0
81082418	160.0	22.0	61.4	263.5	83.5
81082419	40.0	0.0	92.8	259.8	79.8
81082420	40.0	0.0	94.2	254.7	74.7
81082421	40.0	0.0	98.5	273.5	93.5
81082422	40.0	0.0	99.7	296.5	116.5
81082423	40.0	0.0	104.7	259.3	79.3
81091515	40.0	0.0	18.4	269.5	89.5
81091516	80.0	16.7	30.9	262.2	82.2
81091517	40.0	0.0	17.9	276.4	96.4
81091518	140.0	42.4	54.0	302.0	122.0
81091519	160.0	51.0	49.2	290.6	110.6
81091520	500.0	30.4	88.6	218.6	38.6
81091521	60.0	32.8	98.5	325.6	145.6
81091522	40.0	0.0	107.8	241.6	61.6
81091523	40.0	0.0	109.8	322.7	142.7
81092111	60.0	17.7	50.3	288.2	108.2
81092112	60.0	17.7	46.7	287.8	107.8
81092113	40.0	0.0	21.0	292.5	112.5
81092114	40.0	0.0	21.0	290.3	110.3
81092115	100.0	22.1	46.4	261.0	81.0
81092116	40.0	0.0	18.0	276.5	96.5
81092117	40.0	0.0	17.6	267.0	87.0
81092118	220.0	58.9	53.2	296.3	116.3
81092119	80.0	58.0	102.4	229.0	49.0
81092120	80.0	57.4	107.8	302.0	122.0
81092121	600.0	74.1	111.8	266.6	86.6
81092122	80.0	59.5	111.8	294.9	114.9
81092123	500.0	72.0	112.7	286.5	106.5
81092212	40.0	0.0	27.8	299.4	119.4
81092213	40.0	0.0	21.0	285.8	105.8
81092214	40.0	0.0	18.0	293.5	113.5
81092215	40.0	0.0	18.1	301.9	121.9
81092216	40.0	0.0	18.4	271.8	91.8
81092217	140.0	20.3	56.2	264.5	84.5
81092218	140.0	52.5	44.5	287.0	107.0

Date (yymmddhh)	Plume Length (m)	Single Cell Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81092219	280.0	54.8	61.0	307.3	127.3
81092220	600.0	37.1	91.0	320.4	140.4
81092221	50.0	21.2	104.7	239.5	59.5
81092222	40.0	0.0	113.6	224.2	44.2
81092223	40.0	0.0	114.4	279.1	99.1
81100613	40.0	0.0	28.7	246.0	66.0
81100614	40.0	0.0	28.7	244.0	64.0
81100615	50.0	7.7	22.8	259.2	79.2
81100616	40.0	0.0	17.4	276.1	96.1
81100617	140.0	20.5	54.0	262.7	82.7
81100618	140.0	45.5	57.5	281.2	101.2
81100619	60.0	28.8	96.5	223.6	43.6
81100620	60.0	32.3	99.3	290.2	110.2
81100621	50.0	21.7	104.7	296.4	116.4
81100622	50.0	19.6	106.2	289.8	109.8
81100623	60.0	30.0	107.7	296.2	116.2
81110310	100.0	24.8	124.5	267.7	87.7
81120212	40.0	0.0	478.4	251.7	71.7
81120213	60.0	16.3	66.0	265.6	85.6
81120214	40.0	0.0	437.6	258.5	78.5
81120215	80.0	26.3	106.2	266.3	86.3
81120216	40.0	0.0	442.1	215.6	35.6
81120217	50.0	27.1	346.9	202.3	22.3
81120218	40.0	0.0	140.8	288.1	108.1
81120219	40.0	0.0	120.1	320.9	140.9
81120220	40.0	0.0	121.6	318.9	138.9
81120221	40.0	0.0	123.8	283.4	103.4
81120222	40.0	0.0	124.4	289.3	109.3
81120223	50.0	29.1	125.8	303.2	123.2
81120503	1,800.0	118.2	125.1	260.2	80.2
81120705	*	32.3	*	296.4	116.4
81120706	800.0	90.9	130.1	289.8	109.8
81120707	1,500.0	110.3	130.1	296.2	116.2
81120708	1,700.0	159.4	155.2	294.5	114.5
81120709	160.0	113.0	575.1	291.9	111.9
81120710	100.0	92.7	537.0	255.4	75.4
81120711	140.0	44.9	172.6	272.8	92.8
81120712	40.0	0.0	469.3	227.1	47.1
81120713	40.0	0.0	458.3	232.6	52.6
81120714	50.0	12.5	431.4	250.7	70.7
81120715	180.0	58.2	135.4	272.9	92.9
81120716	60.0	43.8	325.9	223.7	43.7
81120717	80.0	56.5	360.9	341.1	161.1
81120718	80.0	53.2	131.1	282.1	102.1
81120719	60.0	54.7	120.9	299.5	119.5
81120720	60.0	54.3	121.6	321.2	141.2
81120721	80.0	66.3	123.0	282.2	102.2
81120722	500.0	76.6	120.1	298.7	118.7

Date (yymmddhh)	Plume Length (m)	Single Cell Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81120723	200.0	76.7	125.8	303.2	123.2
81121701	1,400.0	106.7	126.4	296.7	116.7
81121702	2,600.0	143.9	125.8	303.0	123.0
81121703	1,500.0	109.8	125.1	281.8	101.8
81121704	900.0	91.1	127.1	284.4	104.4
81121705	1,000.0	93.2	125.8	302.6	122.6
81121706	1,700.0	113.9	121.6	282.4	102.4
81121707	1,700.0	113.2	125.8	284.6	104.6
81121708	800.0	116.3	150.3	295.6	115.6
81121709	160.0	119.0	549.6	322.3	142.3
81121710	100.0	89.5	519.0	355.5	175.5
81121711	40.0	0.0	497.9	208.9	28.9
81121712	40.0	0.0	346.3	205.1	25.1
81121713	40.0	0.0	326.2	265.0	85.0
81121714	80.0	24.8	75.3	299.6	119.6
81121715	80.0	30.1	47.1	294.9	114.9
81121716	50.0	22.8	253.2	214.0	34.0
81121717	500.0	50.5	100.9	269.1	89.1
81121718	80.0	47.2	105.4	217.0	37.0
81121719	80.0	46.7	108.4	303.7	123.7
81121720	80.0	45.6	113.2	297.4	117.4
81121721	80.0	63.9	123.8	297.2	117.2
81121722	80.0	60.4	124.4	287.2	107.2
81121723	200.0	76.7	125.8	281.4	101.4
81122315	40.0	0.0	307.5	318.6	138.6
81122316	120.0	16.7	84.3	334.2	154.2
81122317	40.0	0.0	134.7	347.2	167.2
81122318	40.0	0.0	112.6	196.5	16.5
81122319	40.0	0.0	116.9	286.3	106.3
81122320	40.0	0.0	116.3	270.9	90.9
81122321	40.0	0.0	128.4	298.2	118.2
81122322	40.0	0.0	120.2	295.6	115.6
81122323	40.0	0.0	130.7	312.6	132.6

Note: * Metrological conditions result in unlimited plume length.

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

122. Please provide the following information regarding the HRSG stack plumes, specifying whether the calculations are for each stack or for both stacks. If the calculations are for each stack, please estimate the combined effect for both stacks).

    n. Please provide quantified estimates of the expected maximum and average height and width.

    o. Please provide quantified estimates of the expected frequency of occurrence and duration, specifying:

        i) The number of hours that the plume will be visible, for each hour of the day per year;

        ii) The total number of hours per year that the plume will be visible;

        iii) The percentage of the total number of hours per year that the plume will be visible;

        iv) The number of daylight hours per year that the plume will be visible; and

        v) The percentage of daylight hours per year that the plume will be visible.

    p. Please calculate the values requested in c above to eliminate periods when fog occurs.

    q. Please calculate the values requested in c above to eliminate periods when visibility will be reduced to less than specified distances (such as less than one mile and less than five miles).

    r. Provide the data, assumptions, and calculations used to derive the estimates, including the model used for a, b, c and d above.

RESPONSE:

o. A water-vapor plume will be visible from the combined cycle power plant for some number of hours per year depending on meteorological conditions. For the purposes of this analysis, a plume is described as visible if the moisture in the plume could condense to form visible water

droplets. However, whether one could, in fact, see the water-vapor plume would also depend on whether the observation is made during daylight or nighttime hours; if during nighttime hours, whether there is sufficient light (from natural or anthropogenic sources) to reflect off of the plume; and whether there are physical obstructions, such as terrain, or meteorological obstructions, such as fog, that would prevent observation of the plume. The height and width of the visible water-vapor plume from the HRSG exhaust stacks will depend on meteorological conditions.

The height of the plume (whether visible or not) will be a function of the buoyant rise of the air from the HRSG exhaust stack plume. When present, the height of the plume from the HRSG exhaust stack will average approximately 381 meters above ground level. The maximum height of the visible water-vapor plume from the HRSG exhaust stacks is estimated to be approximately 1,103 meters above ground level. The width of the visible water-vapor plume will depend on the length of time it takes for the plume to be diluted with ambient air such that the moisture content of the air drops below the dew point, and hence the plume becomes invisible. The average width of the visible water-vapor plume from the HRSG exhaust stacks is estimated to be approximately 69 meters. The maximum width is estimated to be approximately 103 meters. The estimates of the height and width of the visible water-vapor plumes are less certain than the estimates of the frequency presented below.

Table VIS-122a indicates the frequency with which water-vapor plume from the HRSG exhaust stacks would be visible for various plume lengths.

As shown in Table VIS-122a, a plume of some length theoretically will be visible four hours per year; however, none of these hours will be during daylight. During nighttime hours, an observer could see the plume only if there were sufficient natural or artificial light. Of these theoretically visible water-vapor plumes, 50% of them will be less than or equal to 100 meters in length and 75% will be less than or equal to 200 meters. While the above conclusions are based on an analysis of a single HRSG exhaust stack, all of the HRSG exhaust stacks are expected to result in a visible water-vapor plume under similar meteorological conditions.

p. The requested frequencies for the HRSG exhaust stacks visible water-vapor plumes are shown below:

i) See response 2 below.

ii) The number of hours per year that a water-vapor plume from the HRSG exhaust stacks theoretically will be visible is estimated to be four hours per year. This number will vary with year-to-year variations in meteorological conditions and plant operation.

iii) A water-vapor plume from the HRSG exhaust stacks theoretically will be visible approximately 0.05% of the hours in a year. This percentage is obtained by dividing four hours per year by the total number of hours in a year (8,760).

iv) A water-vapor plume from the HRSG exhaust stacks is not expected to be visible during daylight hours.

v) A water-vapor plume from the HRSG exhaust stacks is not expected to be visible during daylight hours.

The modeling results presented above and in Attachment VIS-122A show that water-vapor plumes from the HRSG exhaust stacks are not expected to be visible during daylight hours. The plumes will tend to form in the winter months and during early morning hours when the temperature is low and humidity is relatively high. This is also the time when fog tends to form, and if fog is present, plumes will tend to blend into the fog. The fog will not prevent the formation of visible water-vapor plumes; however, the fog will make it more difficult, if not impossible, to see the visible water-vapor plumes. Another mitigating factor is the presence of water-vapor plumes from existing facilities that will be present when the Mountainview HRSG stacks create a plume. The presence of these other plumes will tend to reduce the impact from the visible water-vapor plumes created by the Mountainview plant.

q. Because a visible plume from the HRSG stacks is expected to occur infrequently and during nighttime hours, fog conditions are not expected to have a substantive effect on eliminating periods when the plumes are visible.

r. We do not have statistical data regarding visibility conditions at Ontario Airport to estimate the effect of low visibility on the frequency of visible plumes from the HRSG stacks. Furthermore, a visible plume from the HRSG stacks is expected to occur infrequently.

s. The data, assumptions, and calculations used to derive these estimates are presented in Attachment VIS-122A.

MOUNTAINVIEW POWER PLANT PROJECT
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(00-AFC-2)

Table VIS-122a
Mountain View Power Plant
Length of HRSG Visible Water-Vapor Plume
vs. Frequency of Occurrence

Plume Length (meters)	All Hours	Daylight Hours
† 100	2	0
< 200	3	0
All	4	0

ATTACHMENT

VIS-122A

Attachment VIS-122A
Methodology and Assumptions for Responses to Data Requests Regarding Visible Water Droplet Plumes from Combustion Sources

Overview

The responses to Data Request Number 122 were prepared using a visible water droplet plume modeling system developed by Sierra Research. The basic principle involves modeling the dilution of a water vapor plume as a function of wind speed, distance, and stability class from the release point, similar to the Gaussian approach for modeling gaseous pollutants. As the plume is diluted, the temperature of the plume approaches ambient temperature, and the moisture content of the plume approaches the moisture content of the surrounding ambient air. At any given point along the plume, one can use the dilution factors to determine the plume temperature and moisture content, given knowledge of the temperature and moisture content of the plume at the time it leaves the release point, and of the temperature and moisture content of the ambient air. Knowing the temperature and moisture content of the plume at that point enables one to determine whether the moisture will condense at that point to form a visible water plume. By performing these calculations along a series of points, one can determine whether a visible plume will form and, if so, the length of the visible plume for each hour evaluated.

The modeling system includes the following components:

- A modified version of the Industrial Source Complex Short Term Model Version 3 (ISCST3 00101) is used to determine plume dilution through the evaluation of water droplet concentrations determined along a series of receptors placed along the plume centerline. These calculations are performed for each hour of the year using a standard modeling meteorological data set.
- A second module, CLAUSIUS, determines the amount of dilution of the plume that is required for the visible plume to evaporate.
- A third module, DISTANCE, determines the distance (along the plume centerline) that the plume is visible.
- A fourth module, COUNT, summarizes the statistics and prints a report.

Each of these components is discussed in more detail below. An electronic copy of the modeling system is being provided to the Commission under separate cover as a confidential filing.

Modified ISCST3

ISCST3 was modified to provide for the determination of pollutant concentrations along the centerline of a plume. The centerline of the plume is represented by flagpole receptors along a single radial from the stack. The model produces an output file, which includes concentrations for each receptor along the radial for each hour of the year. Relative to the concentration present in the stack, the concentrations reported at each receptor represent the degree of dilution of the plume with ambient air at that point. The modified version of ISCST3 has the following features:

- Calculations can be performed for up to 100 receptors placed along the centerline of the plume.
- Default ISCST3 features that prevent calculations of pollutant concentrations at locations close to the emission source have been disabled.
- To avoid ignoring meteorological conditions where visible plumes are likely to be formed, wind speeds of less than 1.0 m/s are set to a wind speed of 1.0 m/s, to avoid implementing the calms processing feature of ISCST3.
- Concentrations are calculated regardless of whether the plume height lies above or below the mixing height.
- Calculations are performed for only simple terrain.
- Calculations are performed for only a single source.

Meteorological data from Redlands for the 1981 calendar year, obtained from the South Coast Air Quality Management District (SCAQMD), were used for the plume visibility analysis. Sounding data, which are included in the SCAQMD data set, are from Ontario Airport. Mixing ratio data were derived from 1981 Los Angeles International Airport surface relative humidity data. The latter data should be applicable to inland sites, such as Redlands, because the mixing ratio typically varies little over distances of 100 miles.

CLAUSIUS

The CLAUSIUS module uses a linear interpolation of water vapor pressure, between the stack exit and ambient conditions, together with the Goff-Gratch formulation of the Clausius-Clapeyron equation for water vapor, to determine the amount of dilution required for the visible plume to not be visible. These calculations are performed for each hour of the year, using the same meteorological data set used for the ISCST3 dispersion modeling analysis. The CLAUSIUS program can perform calculations for various types of sources:

- Sources with a fixed exit temperature
- Sources with exit temperatures at a constant increment above ambient temperatures
- Sources with a fixed moisture content

- Sources where moisture content is a function of ambient temperature
- Sources with a moisture content fixed at a specified relative humidity, given an ambient temperature

In this regard, the modeling system can be somewhat more versatile than other models typically used to evaluate visible water plumes, such as SACTIP (Seasonal/Annual Cooling Tower Impact Program), since combustion sources as well as cooling towers can be treated.

DISTANCE

The DISTANCE module uses the resulting output from ISCST3 and CLAUSIUS to determine the distance along the centerline of the plume where sufficient dilution has occurred such that the plume is no longer visible.

COUNT

The COUNT module summarizes and prints the statistics regarding plume visibility. Available statistical outputs include the number and frequency of hours in which a plume is visible, separately for daytime and nighttime conditions, as well as a frequency distribution of visible plume lengths. The day/night boundary is treated as sunrise/sunset, calculated for every day of the year.

Assumptions

HRSG assumptions were derived from data provided by the project's design engineering firm, and reflect worst-case conditions. (Low ambient temperatures, often accompanied by high relative humidity are most likely to be associated with the formation of a visible water plume; turbine fuel consumption is highest at low ambient temperatures.)

- Stack gas exit temperature = 359.67°K (187.7°F)
- Stack diameter = 7.758 meters (25.45 feet)
- Stack gas exit velocity = 19.88 m/sec (65 ft/sec) (based on low temperature ambient, full load operation)
- Stack gas moisture content = 9.69% (based on 100% turbine load, 102°F ambient temperature, duct burners in operation)

Interpretation of Results

The water droplet plume visibility analysis is an approximation technique, which should not be used to establish limiting conditions for the operation of

a facility or a particular piece of equipment. The following caveats should be observed in interpreting the model results:

- Meteorological conditions reflecting low mixing heights may not necessarily be properly modeled. Little data are available regarding temperatures and relative humidity levels above the mixing height at any particular location, such as Redlands, and the plume is no longer in a well-mixed surface layer.

- The model is least reliable at predicting plume visibility under calm nighttime conditions, since both temperature and relative humidity vary strongly with height under those conditions. What is measured at the meteorological station (at a height of 10 meters) may vary considerably from actual conditions at plume height. In general, under cold, nighttime conditions (with shallow radiation inversions), temperatures are likely to be colder, and relative humidity higher, at the height of the meteorological monitor than at plume height, thus resulting in an overstatement of plume visibility during these conditions.

- Latent heat release and absorption are not treated in the modeling system. These effects are likely to be of secondary importance for combustion plumes traveling for relatively short distances, but may play a more important role for cooling tower plumes. Condensation of water droplets in the plume will cause the plume to increase in temperature, while evaporation of those droplets will subsequently cool the plume by a similar amount. These effects are likely to be negligible in the case of combustion sources, where the plume temperature is already 100°F (or more) warmer than the surrounding ambient air. The effect of ignoring latent heat release and absorption is to slightly underestimate initial plume rise, and slightly underestimate plume length.

- The model results are extremely sensitive to assumptions regarding ambient and stack gas moisture content and relative humidity (as is actual plume visibility). Furthermore, it is not clear that the accuracy of the relative humidity monitors is suitable for the use to which the data are being applied.

Modeling Results

The following table summarizes the hour-by-hour modeling results.

Date (yymmddhh)	Plume Length (m)	Max Plume Width (m)	Final Plume Height (m)	Wind Dir (deg)	Plume Dir (deg)
81010201	*	10.3	*	287.5	107.5
81020901	100.0	103.1	1,103.8	231.6	51.6
81121702	160.0	100.4	210.6	303.0	123.0
81121703	100.0	71.8	210.3	281.8	101.8

Note: * Metrological conditions result in unlimited plume length.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

123. Please explain the steps and the specific actions that the applicant has taken or intends to take to work with the County to develop the landscaping/grading plan.

RESPONSE:

The applicant has reviewed the County of San Bernardino's General Plan as it applies to landscaping, grading and adequate screening. Additional steps have been taken to work cooperatively with County officials and personnel so as to ensure absolute compliance. The following steps have been taken or are in process of implementation:

1. As set forth in San Bernardino County Development Code Section 84.030610(2)(A) and 84.030610(2)(B), the applicant has begun compliance with the set back requirements by developing adequate screening of buildings and parking areas from the right-of-way so as to significantly reduce any and all visual impacts. Furthermore, applicant shall implement and maintain such screening for the life of the project.
2. Requirements set forth in San Bernardino County Development Code Section 84.030610(2)(d) compel applicant to minimize all removal of native vegetation, especially timber. Vegetation and landscaping will be compatible with the local environment and, where practicable, such vegetation and landscaping will be capable of surviving with a minimum of maintenance and supplemental water. Even at mature growth, landscaping and planting will not obstruct significant view, instead, however, will minimize all visual impacts of the plant.
3. Moreover, applicant will comply with all grading requirements set forth in San Bernardino Development Code, Section 84.030610(2)(g). Applicant will minimize and/or avoid the alteration of the natural topography of the site to ensure no detrimental effects to the visual setting of the designated area and the existing natural drainage system. Additionally, alterations of the natural topography will be screened from view by landscaping and plantings that harmonize with the natural landscape of the designated area and, such landscape will be capable of surviving with a minimum of maintenance and supplemental water. Furthermore, the applicant will comply with the required grading and ridgeline development standards.

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In an effort to cooperate with the County and comply with all guidelines, the applicant contacted the San Bernardino County Planning Commission. Pursuant to the Office of Building and Safety, no actual landscape/grading plans are required by the County. Instead, County officials require conditions to be set forth in the Final Decision issued by the California Energy Commission. So as to determine such conditions, County officials utilize Administrative Design Guidelines as adopted by the Board and amended September 14, 1995. These guidelines, filed under separate cover, were obtained from Mr. Jim Squire, San Bernardino County Planning Commission. Contact information for Mr. Squire is as follows: phone (909) 387-4180 at the San Bernardino Planning Commission, 385 N. Arrowhead Avenue, First Floor, San Bernardino, California 92415-0182.

MOUNTAINVIEW POWER PLANT PROJECT
DATA REQUEST
(00-AFC-2)

Technical Area	**Visual Resources**

REQUEST:

124. Please explain the steps and the specific actions that the applicant has taken or intends to take to work with the City of Redlands to ensure that the project complies with the General Plan requirements discussed above.

RESPONSE:

As part of the applicant s efforts to annex the 82-acre property, the City of Redlands has pre-zoned the property as M-2. Due to inconsistency with specific standards under the existing City of Redlands M-2 zoning requirements, the City of Redlands Planning Commission approved Ordinance Text Amendments and a Development Agreement between the City of Redlands and the applicant on March 14, 2000 (Development Agreement filed under separate cover). The city Council approved the matter at its regularly scheduled May 2, 2000 meeting.

The Development Agreement between the applicant and the City of Redlands provides the applicant with a vested right to develop the site to the extent allowed in M-2 industrial zones. The applicant is required and intends to fully comply with applicable provisions of the General Plan and Municipal Code.

Furthermore, pursuant to the required processes, the applicant plans to develop a development plan and submit such plan to the City Planner. A project planner assigned to the project will review the plan. It is the applicant s understanding that the contact person responsible for the instant project is Jeff Shaw, Community Development Director for the City of Redlands Community Development Department.

Finally, the applicant will comply with all requirements set forth in the City of Redlands General Plan. By recognizing and addressing concerns and developing a plan consistent with the guidelines set forth in the General plan, the applicant will acquiesce to those provisions that ensure compliance with historic and scenic conservation, preservation of vegetation, and existing historic and architectural views.